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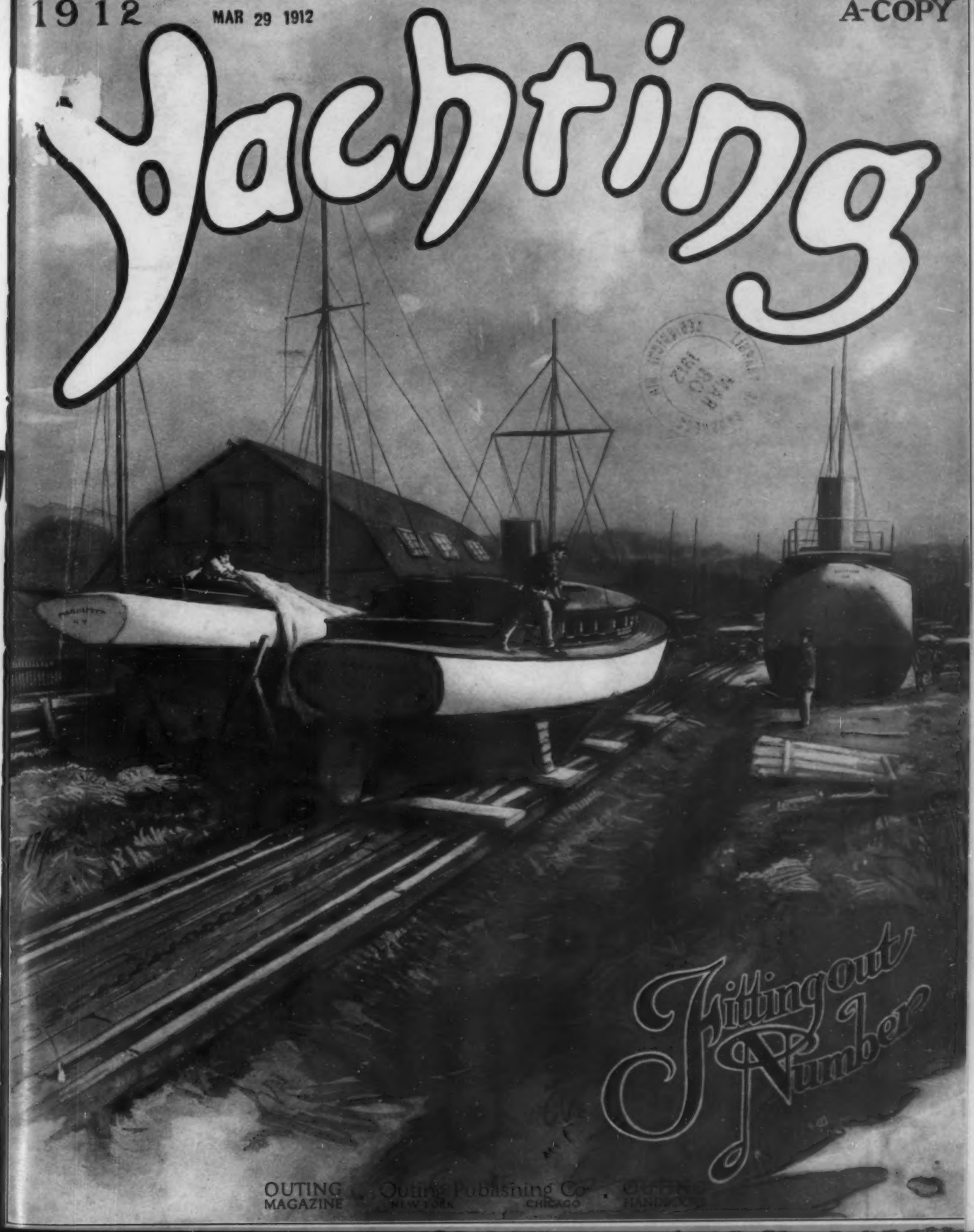

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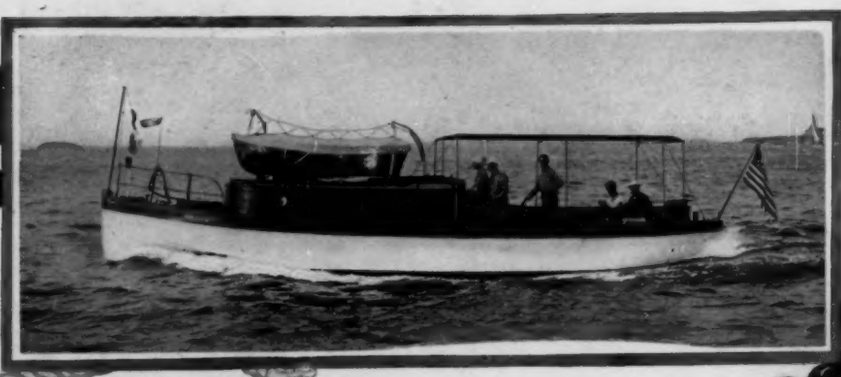

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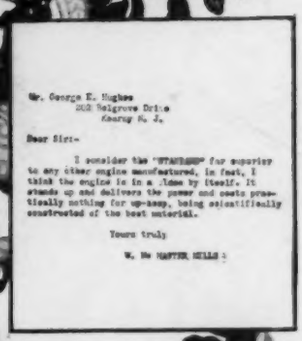

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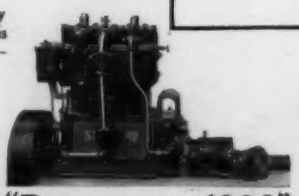

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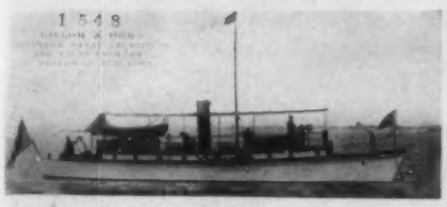
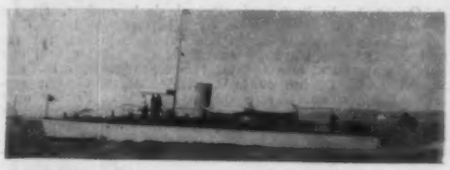


NO. 1548—FOR SALF—Unusual amount of deck room and accommodation. 65 x 12.6 x 3.6 feet draught; speed about 13 miles; main saloon, two staterooms and bath; interior finished in white and mahogany; electric searchlight, etc. Full particulars, Gielow & Orr, No. 52 Broadway, New York.



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NO. 2248—FOR SALE—An ideal cruising auxiliary yawl; 47 feet o. a., 12.6 feet beam, 5 feet draught; good freeboard; 1 double stateroom, 3 berths and 2 transoms in cabin, sails only used one season; good inventory. Price low. Full particulars and inspection permit from Gielow & Orr, No. 52 Broadway, New York.

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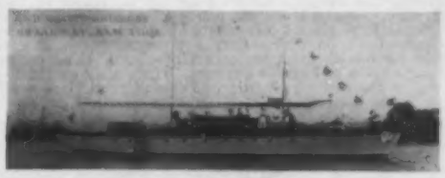

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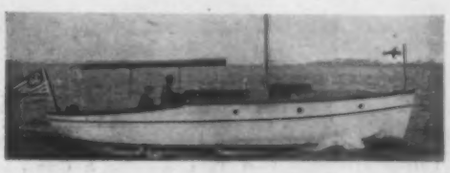

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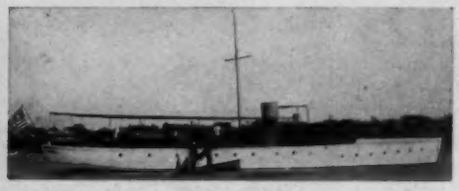

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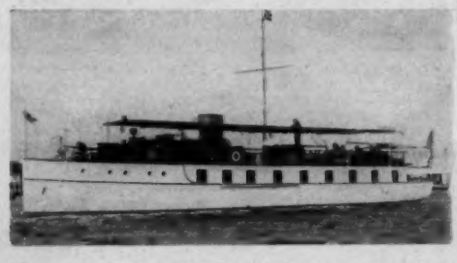
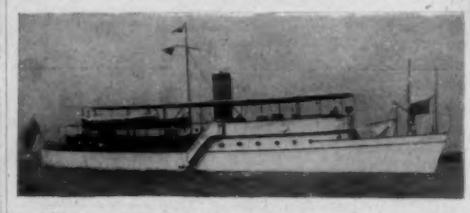
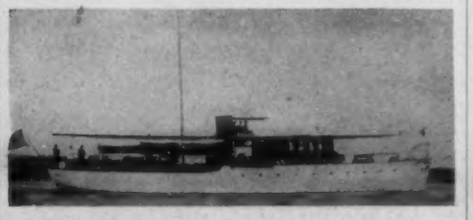


NO. 1865.—FOR SALE—Practically new 90x17x3.5 ft twin-screw power yacht; houseboat type. Speed 10-12 miles. Four staterooms, two bathrooms, etc. Ideal cruiser for both northern and southern waters. Tams, Lemoine & Crane, 52 Pine Street, New York.



NO. 7291.—FOR SALE—Very able, seagoing, cruising yacht, 92x89x13x4 ft. 2 in.; 20th Century motor, 6-cylinder, 9x10, 105 nominal H.P. The best appointed, fitted, and furnished yacht of her size on the Atlantic coast. She has an unusual amount of deck space. Accommodations liberal, consisting of a large saloon, two staterooms, and a bathroom, in addition to comfortable crew's quarters, galley, and well-ventilated engine room. Solid mahogany finish throughout. (Examine photograph.) Yacht open for inspection. For further particulars apply to Tams, Lemoine & Crane, 52 Pine Street, New York.



NO. 7877.—FOR SALE—Modern raised-deck twin-screw cruiser; 90 ft. over all, 83 ft. water line, 17 ft. beam, 3 ft. 6 in. draught. Built by Lawley, 1909. Very well constructed. Two 60 H.P. Craig motors. Speed, 12 miles. Carries 1,200 gallons of gasoline and three boats, one a launch. Large saloon and pantry on deck. Three good-sized staterooms, valet's room, bathroom, 3 W.C.'s, and dressing room. Large galley. Complete electric light plant. Hot water heating system. Engine room and crew's quarters well ventilated. Price attractive. Full particulars from Tams, Lemoine & Crane, 52 Pine Street, New York.

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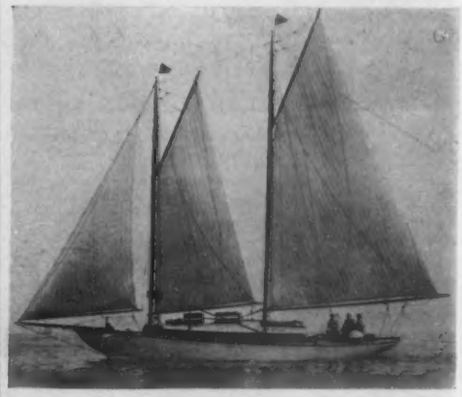

NO. 6040.—FOR SALE—Practically new auxiliary schooner yacht, 46 ft. 6 in. over all, 32 ft. 6 in. water line, 12 ft. 6 in. beam, 2 ft. 8 in. draught. Designed by Crowninshield, built by Rice Brothers, 1910. Oak frames, pine planking. Full suit sails. Good condition. Standard 2-cylinder motor. One double stateroom, saloon, 2 berths, bathroom, good galley and forecastle. 100 gallon water tank. Fully equipped for cruising. Fast and able sea boat. Further particulars from Tams, Lemoine & Crane, 52 Pine Street, New York.

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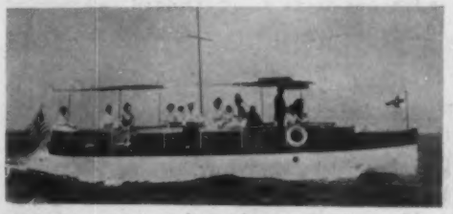

NO. 505—FOR SALE—Bridge deck gasoline cruiser; 40x9x3.2 ft. Exceptionally seaworthy. Speed 10 miles. Double stateroom, saloon, toilet, etc., aft. Mahogany finish throughout. Cox & Stevens, 15 William St., New York.

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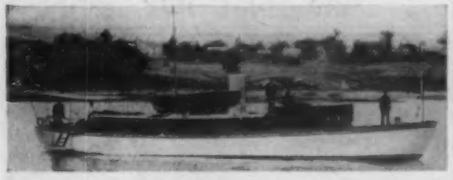

NO. 544—EXCELLENT BARGAIN—Able and roomy 65x14x4 ft. twin screw gasoline cruiser; speed 11½ miles; two 40-H.P. 4 cyl. Globe motors (installed 1908); large accommodation; electric lights; first-class condition; completely found. Apply to Cox & Stevens, 15 William St., New York.

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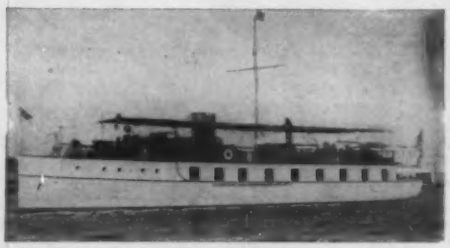
NO. 429—FOR SALE—Handsome 68x12.3 ft. motor yacht. Speed 12-13 miles; Standard motor. Mahogany finish throughout. Excellent bargain. Cox & Stevens, 15 William St., New York.



NO. 1662—FOR SALE—Practically new 90x17x3.5 ft. twin-screw power yacht; houseboat type. Speed 10-12 miles. Four staterooms, two bathrooms, etc. Ideal cruiser for both northern and southern waters. Cox & Stevens, 15 William St., New York.

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NO. 107—EXCEPTIONAL OPPORTUNITY—American-built modern, fast 170-ft. steel steam yacht in perfect condition. Two deck houses, five staterooms, three bathrooms. All hard-wood finish. Complete equipment. For quick sale will accept very low figure. Full plans and particulars on application to Cox & Stevens, 15 William St., New York.

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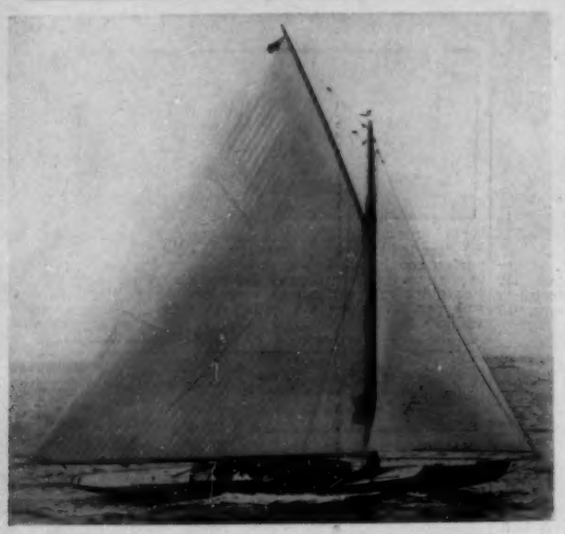

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Boat is in A1 condition and a decided bargain. $900 will be considered.

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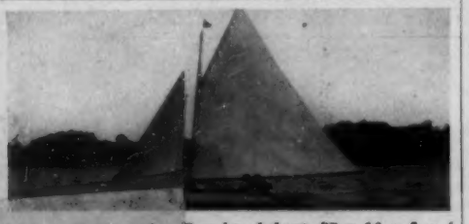

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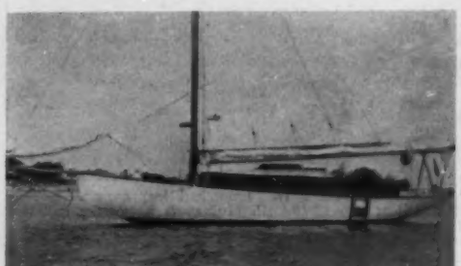

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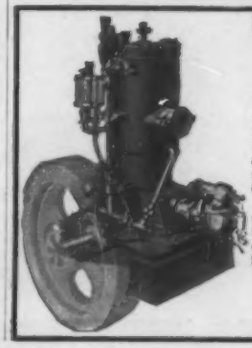

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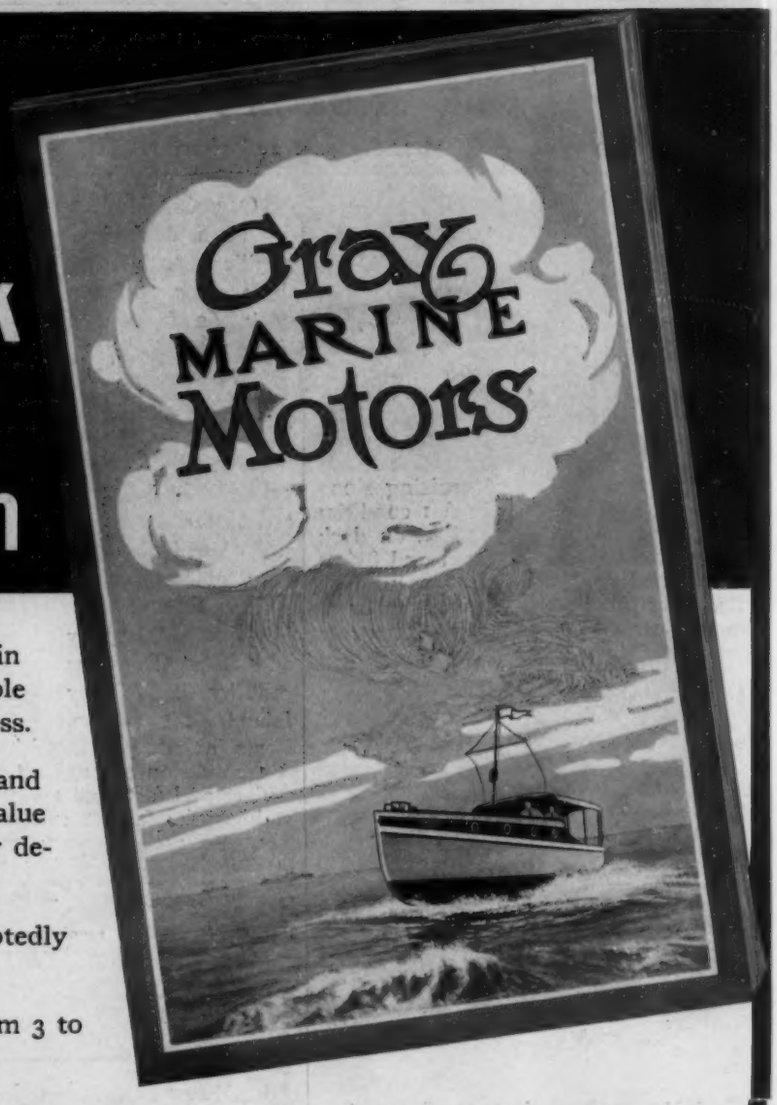

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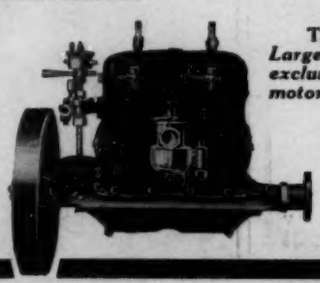

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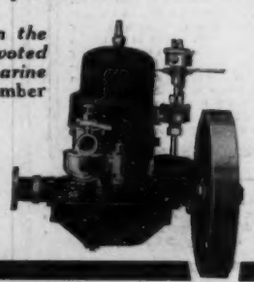

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HERBERT L. STONE, Editor.

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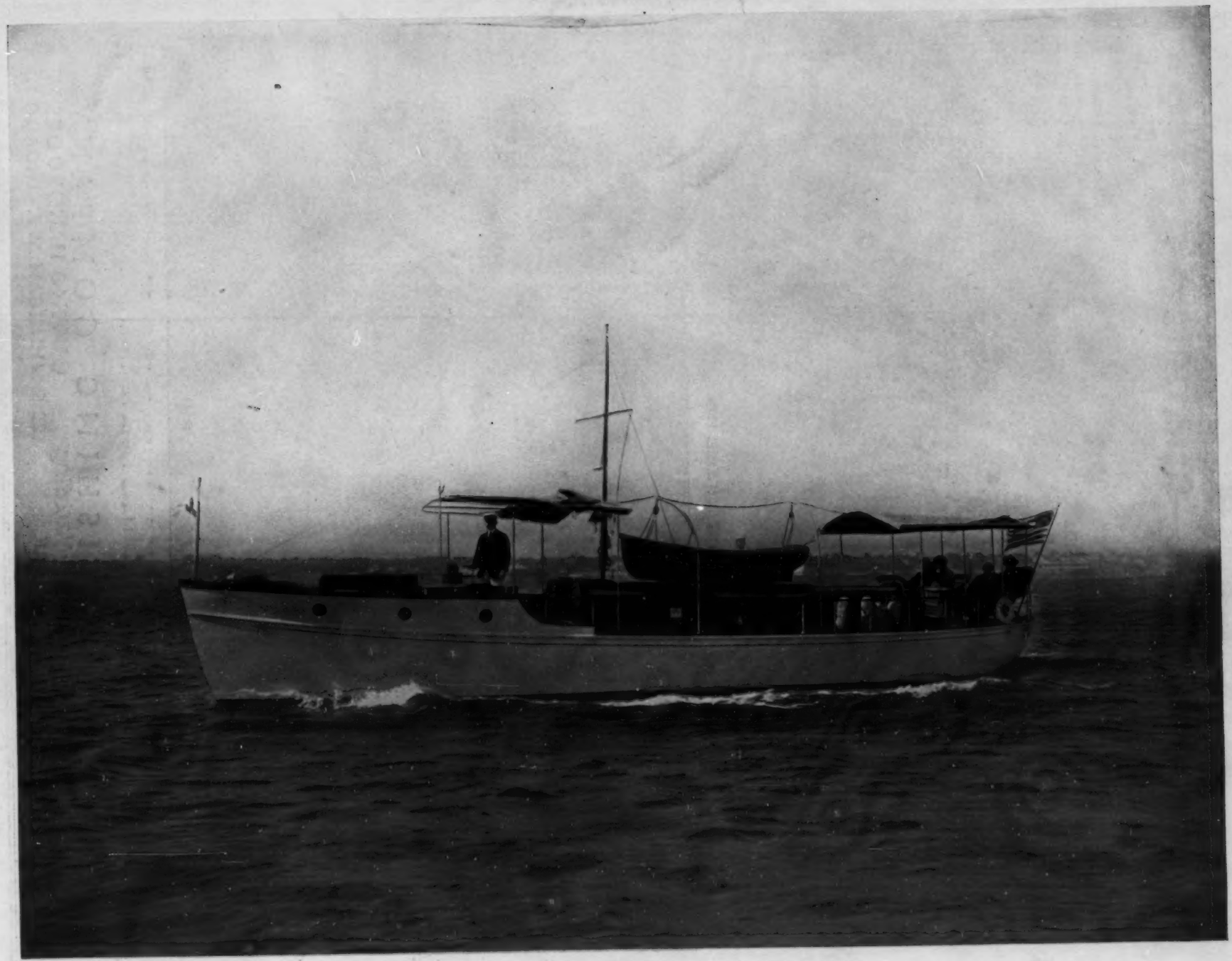

ONE OF THE EARLY BIRDS. APRIL SEES MANY OF THE CRUISERS OVERBOARD

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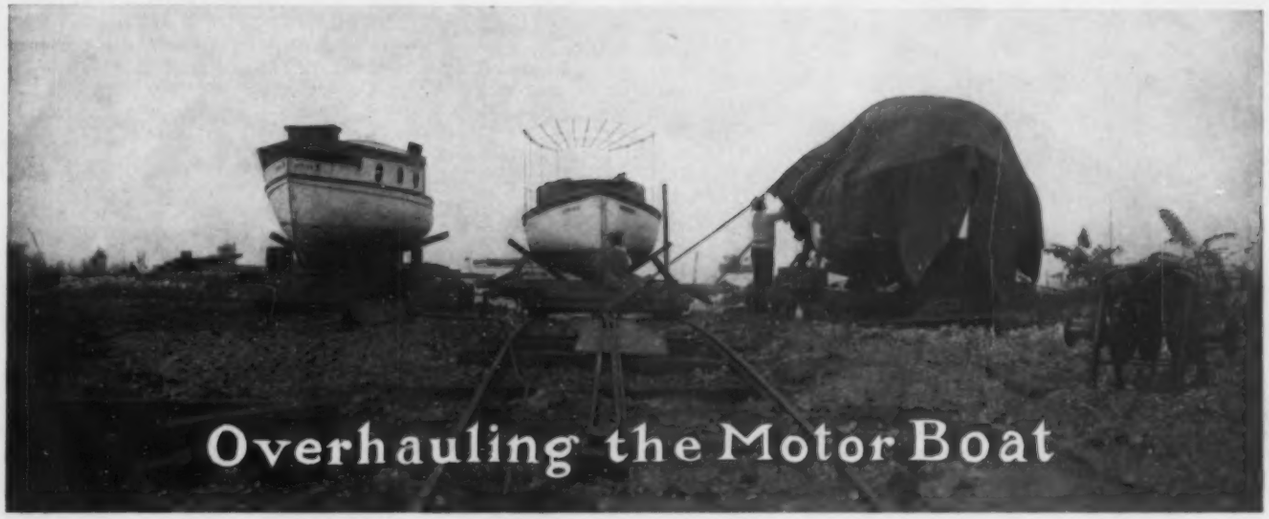


Overhauling the Motor Boat

What Is Necessary To Be Done before Going Overboard, and How To Do It. Much of the Season's Fun Is in Fitting Out Your Own Boat

By STILLMAN TAYLOR

SPRING is a busy season for the boatman, and as soon as settled weather will permit of outdoor work the owners of water craft are eager to begin the preparatory work which is annually required to put their "little ships" in cruising trim. And so, in writing this little chapter on the practical end of a sport which is now so universally enjoyed, I shall aim to give the reader a few practical suggestions gleaned from a long and varied boating experience. Since the larger number of boatmen are owners of comparatively small and inexpensive craft, this article is written with the idea of assisting those who, like the writer, have discovered that the pleasures of boating are not in proportion to the amount expended, but are best found in a "one-man" craft where the owner is his own skipper and engineer, and oftentimes the crew and cook as well.

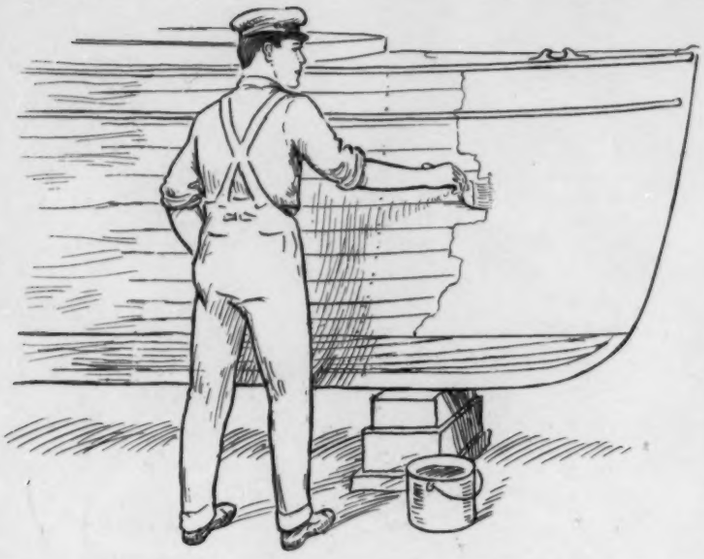
The first job should be in the nature of a thorough ship-cleaning. Taking advantage of the first few sunny days of early spring, the boat should be freed from the covering of boards and canvas which has served to protect it during the winter, and thoroughly aired. Every boat will sweat more or less during the idle period and all lockers, ports and cupboards should be opened to admit a good circulation of air through the entire boat. The work of cleaning ship may now begin, first taking out everything movable. The loose dirt should be brushed out, floor boards taken up and the whole interior given a good scrubbing. Begin at the bilge, after the fashion of the housewife, using plenty of water (hot, if procurable) and washing soda. A handful of this useful alkali will save much laborious scrubbing by cutting out the old grease and dirt, which accumulates to a great extent on the engine bed and flooring.

While cleaning the bilge, do not forget to clean out the limbers (the holes bored through the timbers to allow the bilge water to drain to the pump). The pump is another detail that should not be forgotten, and to make sure that it will be found in working shape when it is needed the strainer should be cleaned off, or renewed if it has given out, and the intakes cleaned. Frequently fine bits of paper, strings, etc., manage to work past the strainer gauze and settle in the intake pipe.

After the clean-up the whole boat should be looked over, making it a point to attend to any repair work that may be necessary. If this is done before the boat is launched, future annoyance may be avoided. A new screw will prevent further damage to that sagging door; a single nail will tighten up that loose floor board which emitted sundry squeaks last summer; a bit of putty will conceal knocks and dents in the woodwork, while the paint brush is a beautifier *par excellence*.

Since painting and varnishing comprise the larger part of the work of putting the boat in condition, a few suggestions on this subject may not be amiss. To do a really good job three things may be considered requisite: Good paint, good brushes and careful brush work. In taking up the problem of interior finishing, the choice naturally falls on white enamel paint, which is not only most attractive but is an economical finish, being easily restored to its original freshness by washing over with soap and water. Although most boat shops mix up their own enamels, the boatman will find it best to buy ready mixed one of the many enamels put up expressly for inside cabin work. As enamel paints are rather heavily charged with varnish gums and dryer, they dry quickly, and for this reason are somewhat more difficult to manage under the brush.

To make a smooth and even surface, enamels must not be too thick, or pasty, but should be thinned down with pure turpentine (do not use oil, which will give a yellowish tinge to the white) until of the proper consistency to work freely under the brush. Only a little turpentine must be added, however, as over-thinning will ruin the glossy finish and produce a dull or flat surface. A good brush is an absolute necessity for spreading enamels, and my choice is a first quality beveled-edge varnish brush. A new brush should be prepared for use by soaking it in linseed oil over night, and then removing the loose hairs by dipping the bristles in paint and working them over the edge of a board. This will eliminate the annoyance of shedding hairs.



In painting, brush in well, being careful to spread the coat on evenly.

If the surface to be enameled requires more than one coat to make it white and smooth, the old wood should be first given two coats of a white turpentine and oil paint, and when this foundation is thoroughly dry the enamel may be brushed on, giving a hard, glossy surface.

PREPARING THE OUTSIDE OF HULL

In refinishing the outside of the boat there is much more work to do. If the boat has been well covered during the winter the paint and varnish should be in pretty fair condition and not much repair work will be required. The outside work will consist mainly of renewing the old paint and varnish, but before this can be properly done the hull should be smoothed over and all rough spots touched up. All dents and bruised places should be touched up with a little white lead and then filled up with putty. If the paint has peeled away in places so as to expose the wood beneath, the edges of these spots should be smoothed down with sandpaper and then primed with the paint.

In case the old surface is rough, due to repeated paintings, it will be difficult to turn out a good job unless the old paint is removed by scraping. To remove the hardened pigment in this manner is real work, but if the boatman is at all particular, the only way to regain the original smoothness of the hull is by scraping down to the wood. To accomplish this several steel scrapers will be needed, and these must be ground to a keen edge. Both triangular and hoe-shaped steel scrapers may be procured at the stores where ship chandlery is sold, the latter form being most convenient, although both shapes will be found useful. Personally, I prefer to make my own scrapers from old flat "mill" files. These may be picked up gratis at almost any machine shop, and when the end is turned over an inch or so at right angles (hoe-shape) a handy tool is fashioned. Any blacksmith will do this quickly, and also temper in oil and grind ready for use. The scrapers are kept sharp by means of a file.

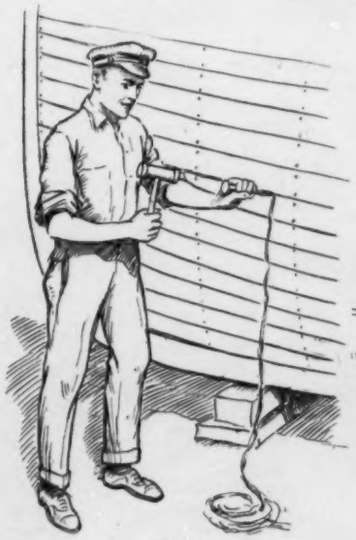
To remove the paint with the scraper alone is a laborious undertaking, and even if one should attempt to do so, the scraper would in all probability leave the wood nicked and rough. Some way of softening up the hard, flint-like shell of paint is therefore desirable. In the shipyard a small gasolene torch is used to soften and blister the paint, which may then be easily pushed off with the scraper. But there is a bit of a knack in handling the hot gasolene flame, and for the average man, the use of one of the many preparations known as "paint and varnish removers" will greatly lighten the labor. These are chemical liquids and are brushed over the old paint and varnish with a brush. They soften up the old shell which is readily scraped away without roughening up the wood.

While at work removing the old paint you may come across an occasional nail that has worked out, and perhaps discover a plank that has become loosened through the vibration of the motor. These should be promptly repaired. Yet another point that should be seen to is the planing down of the edges of the planks where they have swelled to form unsightly ridges—a fault confined to new boats, which generally require a little touching up with the plane the second year. A good smoothing up with sandpaper (coarse grade for roughing in, medium fine for the final smoothing), followed by a brushing to remove the dust, and the laborious part of the work is over.

CAULKING

In case the boat is old and the caulking has started to roll out of the seams in places, she will not be sound and tight until the seams have been recaulked. To do this properly requires some careful work, and if the boatman questions his skill with the caulking mallet he should call in an "old hand" to help him out. However, it is not difficult, provided the old caulking is first cleaned out of the seam. A stiff-bladed knife will prove handy for this work, but for large boats a beveled-edge iron ("reefing iron") must be used with the mallet to force the old cotton from the seam.

For small boats, where the planking is thin and the seam shallow, candle wicking should be used for caulking, and this may be forced in with a putty knife or rolled in with a caulking wheel. The larger craft are caulked with regulation caulking cotton,



Caulking.

Removing the piston rings.

In lifting off cylinder be careful to keep connecting rod in true.

Get down on your knees and go over the deck with a scraper, first softening with a varnish remover.

which is lightly driven into the seam with a caulking iron and mallet. Avoid using a large quantity of cotton and employing considerable force in an attempt to drive it in the seam. This mistake is a common one and many amateurs "break" the seams of their lightly-planked craft by forcing a wad of cotton through the plank joints. In no case should the seam be solidly filled with cotton. The cotton should be driven in firmly to the bottom of the seam with quick, light taps of the mallet, and enough space must be left to putty the seam flush with the outside planking. Before running in the putty, white lead should be brushed into the seam. This will hold the putty and prevent it from working out.

PAINTING

The work of painting may now go on, and pains should be taken to secure a smooth and attractive finish. In the matter of paint one may purchase any first-class brand of Yacht White, of which there are many on the market. Poor paint is money thrown away. The highest grades are the most economical, and while the first cost is slightly higher the better appearance and greater durability to be had by good lead and oils will prove the cheapest when tried out by time. While the outside enamel paints give a hard and brilliant finish, I prefer the time-tried pure turpentine paint for the hull. In point of fact the use of an almost pure turpentine paint is strongly recommended, for the reason that enamels and other hard-drying paints are prone to peel and flake if the boat is roughly used, while a turpentine paint is flexible and rubs off just enough in service to keep the hull clean and smooth. By using a turpentine paint the pigment does not accumulate in layers, which necessitate scraping every other year to keep the surface smooth. It is, of course, understood that the paints put up for general house use are not at all adapted for boat work, since they are usually of a cheaper grade and have a tendency to mildew or turn black, and also to crack and peel from exposure to sun and water. In thinning all ready-mixed yacht paints pure turpentine only should be used. Substitutes for turpentine are coming into quite general use, yet the boatmen will do well to stick to turpentine. In using but a comparatively small amount of paint the difference in price is trifling.

Good painting cannot be well done without good brushes, and the boatman should not hesitate to invest in a few first-class tools. For general outside work he will require at least a 4- and a 2-inch flat wall brush and two or three sash brushes for cutting in small work, as mouldings, trim, etc. In addition to these a 4-inch wall brush will be needed for the copper or other bottom paint, and a 2- or 3-inch beveled-edge varnish brush. All of these brushes should be of the best quality, long and thick in the hair, and well gripped in a substantial ferrule. In choosing a brush of the better kinds (prices running from seventy-five cents to two dollars, according to size) it may be well to remember that the grey and white mixed Siberian bristles are in every way superior to the common black China bristles. Cheap brushes are handy for painting moorings and other rough jobs, but being thinly set and short in the hair, do not hold paint well and encourage streaky and slovenly brush work.

EVERYTHING DISCONNECTED

UNCOMFORTABLE POSITIONS ARE SOMETIMES NECESSARY IN SCRAPING THE BOTTOM

In painting a hull which has been scraped down to the wood, the first coat should be in the nature of a primer, carrying about one-third oil and thinned down with turpentine. This foundation coat should become thoroughly dry before the second is brushed on. For the second and third, or finishing coat, just a dash of oil is best, thinning largely with turpentine. Three coats properly applied will produce a smooth finish. Pure white lead gives a nice white body, but a more brilliant white may be had by adding a very small quantity of zinc white. However, zinc must be used very sparingly for outside painting, as it dries very hard and brittle and if too much is added the paint will be wanting in durability and tend to crack and flake off. In mixing up paints for cabin tops, decks and seats, which are subject to hard wear, enough oil must be added to prevent the paint from rubbing.

The waterline and bottom of the boat is done after the hull has been finished. Secure a long, thin batten (such as is used in making lattice work) and bend the top edge to conform to a section of the waterline. The batten cannot well be bent to follow the waterline its entire length, and the help of a friend who will hold one end of the batten while you are cutting in that portion of the line conforming to the batten's curve will help. By shifting the batten along from stem to stern the whole is painted in. If the waterline is cut in with the shag end of a small file it will not be painted out, and the score mark so made will prove of great assistance in painting up to the white, and so striking in the line cleanly and evenly throughout its length.

OVERHAULING THE MOTOR

The work of overhauling the motor is not the least important part of putting the boat in commission, and that the power plant may be thoroughly cleaned, lubricated and properly adjusted, the entire engine should be taken down. To do this, the motor should first be dismantled, the magneto, carbureter, fuel, water and lubricating pipes being removed. To avoid mixing up the parts, a few boxes will be found useful to keep the many small units from being mislaid. This done, the cylinders may be removed by unscrewing the "holding down" bolts which fasten them to the crankcase. The cylinders may now be lifted off their pistons. In doing this care should be taken to lift them as straight as possible, to avoid springing the connecting rods out of true. It is, therefore, a good plan to have an assistant handy to hold the pistons upright while the castings are lifted off.

Make it a point to clean each part as it is removed. Attention should be given to screws, bolts and other small parts as well as to the larger components. Following out this plan, the cylinders should be thoroughly cleaned of any carbon that may have accumulated. This hard scale is often difficult to remove, but a good soaking in kerosene will help to soften up the burnt oil. By putting corks into, or otherwise stopping the intake and other openings in the cylinders, kerosene may be poured in their bases. The use of one of the several chemical "carbon removers" may also be suggested as an aid in cleaning.

The cylinders should be marked, and before uncoupling the pistons these should be marked with a file scratch or otherwise designated, that both cylinders and their pistons may be assembled in their relative positions. The piston rings should be looked over, and if "blow marks" (black, sooty streaks) are found it indicates that gas is leaking past the rings and the old ones should be renewed. Piston rings should be marked with a file that they may be replaced in their proper grooves and in the same piston as before. Neglect to do this is likely to result in a mix-up when assembling, and is the cause of the motor often showing a marked falling off in compression after overhauling. Yet another important detail of the piston is the wrist or gudgeon pin. This should always be a good, tight fit in the bosses and firmly secured against coming adrift by the tapered pin or set screw. If loose, it may require nothing more than setting up on this set screw. The point at which to look for wear is on either of the connecting rod bearings. A worn pin will show a ridge at these two points, and a new pin is needed.

The chief points where wear is likely to occur is in the bearings of the motor. The main, or crankshaft, should be examined and tested for looseness by rocking the shaft back and forth. A little play is desirable, but when noticeably slack the shaft should be adjusted closer. In practically all modern motors the bearings consist of split bushings, and adjustment is effected by the insertion of metal "shims," that is, thin pieces of copper or brass placed between the bearings and its seat. In ordinary cases, the removal of one or more of these shims will be all that is necessary, but in event that the bushing is found considerably worn, new bushings should be put in.

It should be obvious that all bearing surfaces must be smooth and polished. Examine the bearing surfaces, therefore, and if they are rough and scored, they require smoothing up. This is done by scraping down the rough spots with steel bearing scrapers. To determine what portions require scraping rub a little red lead (common blueing may also be used) on the surfaces. By rotating the shaft the color will be worn away from the rough, high spots, which should be carefully scraped smooth. In using the scrapers (a handy set may be found at most marine supply stores) it will be well to work slowly and carefully, paring away very little metal at a time, and repeatedly trying the "fit" by applying a coat of color and rotating the shaft as described. The crankshaft should be adjusted to a good fit, yet not so tightly as to pinch the shaft. About .002 of an inch play to every inch of crank diameter is the usual assembling rule in the factory. The amateur may allow .003 of an inch, it being safer to err on the side of too much play rather than to pinch the bearing. Too little play will produce considerable unnecessary friction, resulting in rapid wear of the bearing and also lowering the power efficiency of the motor. Too much play, on the other hand, will produce hammering or "knocking" and likewise cause rapid wear. In making this, as well as the many other adjustments about the motor, common sense is the only rational guide to follow.

In motors of the four-cycle type, the valves demand attention at overhauling time, and they should be "ground in" that they may fit their seats closely and prove gas-tight. Valve grinding is a simple operation, and any fine grade of emery, carborundum, or pumice may be used with water for a medium. In using emery and carborundum, put a little of the abrasive in a tin and add a little oil or vaseline to make a thin paste. But very little of the emery need be used since the work of grinding is more quickly accomplished if a little abrasive is used with plenty of oil, and a much smoother job is turned out.

To grind a valve, smear a little of the mixture on the bearing surfaces of the valve and seat, then rotate the valve back and forth by placing the blade of a screwdriver in the slot in valve head and rotating the handle between the palms of the hands. A screwdriver bit and brace may also be used. A well ground-in valve should have the contact surfaces bright and polished, and free from marks and scratches. In case the valves and seats are rather badly pock-marked and rough, a coarser grade of emery may be used, or the preliminary roughing-in may be given with a flat file. Upon completing grinding, the valves and seats should be thoroughly cleaned with gasolene.

After the motor has been assembled it may be necessary to readjust the valve gear, for repeated valve grindings will soon lengthen the stems and there may not be enough clearance between the stem and the tappet or push rod. A clearance of ap-

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The Exposure of an Expert

By Warren H. Miller

ACKER was an Expert. Spell it with a large E. He owned everything that drank gasolene from a hundred-mule-team touring car to a seal-flippered, seventy-devil speed canoe. Lord help the poor individual who tried to walk home with 14 parcels and a coil of garden hose anywhere within the Pohank commutation zone if Acker and his go-cart happened to be passing that way! There would be a nerve-racking *chreeeekii* of the gears, a three-flat squeal from the brakes, and his automobile would bring up all standing over the curb, a few inches under your hind legs as you went up a tree.

"Get in!" would be Acker's peremptory command. The victim got. Anything rather than be chased by that bloodthirsty fiend-wagon of his! Then Acker, like "Satan yawning on his brazen throne," would lie back in the cushions, flatten both of his ears under his cap, close his eyes, and open everything up. A hundred miles an hour always lulled him to sleep.

Not so the victim. The scenery flew by horizontally—trees, houses, dogs, cats, chickens and geese all welded into one harmonious fresco of flying wild life—and every gutter and thank-you-mar'm catapulted the poor, forlorn, lonely unfortunate in the back tonneau yards into the air, catching him again on the return bounce with the graceful abandon of a flapjack artist.

Naturally such a past master in the art of flying in a go-devil would acquire an adventitious reputation as an expert in four-cycle, forty-cylinder gas engines—with all the swelled head that goes with it—but it was not until Acker and his seventy-devil war-canoe invaded the Pohank Yacht Club that this reputation became gall and wormwood to all the respectable motor boat owners of the club. For Acker carried that reputation around with him on the end of a blatant tongue; you were aware of it the minute he blew in.

The Skipper had more self-respect than ever to be seen alive in any such contraption of greasy steel bones as a "car," let alone Acker's. Jake and Bill never got the chance. But, soon after the Blazing Arrow—that was Acker's go-craft—received her berth at the anchorage off the float, the noise of contention and argument began to be spread abroad in the clubhouse. Motor boat bugs, who were wont to abuse each other at the billiard tables over such puerile arguments as spark plugs and carburetors, found themselves overwhelmed by the flood of ponderous, encyclopedic knowledge that Acker unfurled, spontaneously and uninvited. In fact, he wouldn't let you discuss such elementary subjects as vibrators and gas mixtures at all. He simply laid down the law on those mysteries and waved you and any rudimentary ideas you might have into silence. He was legal; ex-cathedra;—a self-constituted supreme court on gas-imbibing motors; and from any decision that he might deign to hand down there was no appeal. Did he not own the fastest boat three times over in the Pohank Yacht Club?

Acker's voice was of the kind that raised an eager desire in all honest men to hop on him with the poll of an axe. It could be heard four miles on a calm day, and it bid fair to break up forever the Sunday afternoon slumbers of the Arm-Chair Fleet. The Skipper in particular was one of those peaceful, law-abiding citizens who love their little snooze of a calm afternoon on the lee verandah of the clubhouse, with just a wisp of good tobacco from the old briar curling through his teeth at occasional somnolent intervals. The strident voice of Acker in his eternal engine arguments finally got on the good man's nerves.

"Jake!—Hey, Bill, wake up!" he hissed, poking the former out of a dream about fly-fishing for trout with a lighted cigar butt, whereat an old he-one, a yard long with a tail as wide as your hand, swam off, smoking it (told later for a fact).

"War, Bully boys! War! Get out the tomahawks!" whispered the Skipper hoarsely.

"Aw, fergit it!" mumbled Jake. "Let er feller sleep, can't yer?"

"Sleep?" fumed the Skipper. "Sleep!—I'd as soon try it under the infernal *prrat-tat-tat* of a rivetting hammer! I tell you this Acker person is insufferable. He needs trimming; showing up; retirement to the Home for Indigent Plumbers; and, if I'm ever going to get another nap of an afternoon dog-watch, it's up to us to expose him."

"What's y'r scheme?" inquired Bill, rolling upright and rubbing his eyes. "Somep'n's got ta be done. Let me in on it."

"Well, if there's any one apparatus in the created universe that can put a crimp in Acker's erudition and humble him with a ripe dish of crow, it's that low-browed, vile-tempered assortment of misfits known as the engine of the Mary Gee. Can you beat her?"

"Not for Acker, though," disagreed Jake, shaking his head. "She hasn't a trick that he wouldn't tumble to the moment she put it across."

"Hasn't she, though! I'll admit that Acker's wise to nearly every fixed symptom of indigestion or paralysis that a gas mill can display; but this one has a few that are never alike twice, and they'll get anyone who doesn't know the why of it."

"Never alike twice?" echoed Bill and Jake in a breath. "Why——"

"Well, take her timer, for instance. Every motor made by man or devil—except yours—has some sort of a fixed pin or set-screw which forces the timer commutator to go around with the rest of the works and touch things off with some sort of regularity. 'Member the time we hurdled over the Crab Island breakwater and I was two hours trying out every prescription I knew on her before I located the trouble? Symptoms—fits, epilepsy; then coma, profound lethargy, ossification; suddenly delirium tremens, hallucinations and a pronounced tendency to

turn hand springs backwards. External indications: Motor has frantic wads of explosions; motor has prolonged spells of extreme lassitude and nervous prostration; motor goes both ways at the same time; motor has obstinate and inattentive periods, needing a jolt from a large dynamo to remind her that there's an anxious human being cranking his heart out over her. Diagnoses: She has cracked spark plugs, they never were sounder in their lives; loose wire—current flows as steadily as the dividends of the fractured Standard Oil Corporation; timer misplaced—go as far as you like, you can put it anywhere for all the difference it makes; vibrators feverish—you never *saw* a finer spark when you put the plugs out on top of the cylinders.

" 'Member how I tried them all, and at the end of two hours was desperate enough to shout Sunday-school texts at that diabolical mule-mill? And about then I just happened to notice that the nut on the timer shaft turned without taking the commutator. If it hadn't been for a paint speck on the commutator I wouldn't have tumbled to it in a thousand years; but the incredible fact is that that motor of yours has nothing more than the friction of that nut to keep the commutator from slipping. It jarred loose when we went over that breakwater—and you know the rest.

"Now, you watch me," quoth the Skipper, rising. "First I'm going to abolish that paint speck and fix that nut for trouble, and then I'm going to challenge Acker to run the Mary Gee 20 feet from the dock——"

"Go to it, old pickle," murmured Jake fervently, "and do it now!"

"And don't ye worry none about money, neither," added Bill. "I'd bet the farm jist fer a chanst to get even with thet goggle-eyed mechanic."

The reader needn't imagine that all this time there was any cessation of the riot in the billiard room. Acker was in there, the storm center of vociferous argument, his black eyes snapping and his bristly black mustache wabbling with the flood of rhetoric as he defended himself against a group of argumentative listeners.

Presently the Skipper bore down upon them, his hands jammed in his pockets, his pipe emitting short staccato puffs. There was war in his eye, war in the rapid exhaust of that pipe, and wrath, cumulative and unsated, in his sorely tried spirit.

"I tell you there's no such thing as the stratifying action of compression," Acker was shouting. "There's no question of argument about it—it's a state of fact, I tell you; and I KNOW!" he yelled.

"You!" quoth the Skipper contemptuously, "you couldn't get a license to run a ten-foot steam launch!"

There was a moment of ominous, astonished silence. Acker's curly mustache waved about like an elephant's lip as he reached for appropriate language—and then weather ensued.

"Why!—You fossil old herring!" he gasped, "where do you come in on this? You stick tight to your t'gan'ts'ls and mizzen tacks,—this's way off your beat—see?"

"Yes, you keep out of this, old pickle," chimed in a few. "We all know where *you* live,—what'd you ever know about a motor boat?"

"I was once," remarked the Skipper, imperturbably, "skipper of the Gloriol——"

"Kill him! Kill him!" shrieked the mob. "Kill the ancient mariner." They hurled themselves upon him.

"A moment, gentlemen," remonstrated the Skipper. "Perhaps I'm wrong. I admit that I'm snowed under. I admit that I had no right to butt into this august conference. *But*——" he opened his mouth impressively as he pulled out a roll of bills. "Here's a wad of twenty U. S. legal documents that says that the gentleman from automobugville yonder," indicating Acker, "can't run the Mary Gee out to the white anchorage buoy and back——"

Acker's eyes bulged like a trussed crab's. "Oh,—shhh! boys,—it's too easy!" he giggled behind his hand. "Say, rummy old scout, I *built* an engine like yours when I was a kid of thirteen. Why, I could run one in my sleep! or if you gave me only half of one I could whittle enough missing parts with my jack-knife to make the rest of her go. Why, I can hold a tin toy like that in the hollow of my hand. It's like holding up children——"

"Tha's all right. I'll take her out to the buoy and back again to the float, just to show everybody she's all right, but I bet you twenty right now *you* can't run her fifty feet from the float; will you cover the money?"

"Cover the money!" shouted Acker, "why it's taking cash from a parson! I'll cover it two to one!"

"Done!" stamped the Skipper. "Come on, everybody,—all hands on deck! And here's ten more that, when you're all in, I'll run her back to the buoy again,—I don't care what you do with her s'long's you don't break anything."

WITH THE GRACEFUL ABANDON OF A FLAPJACK ARTIST

The news got around the whole club and the anchorage was alive with dinks hurrying ashore to see the fun. The bases were full when Wagner stepped to bat. The Skipper sprang lightly into the Mary Gee as they reached the float, cast her off, spun out to the anchorage buoy and returned. Then he elaborately filled all the oil cups in the presence of witnesses, vaselined the timer cup (taking an unnecessary length of time fussing over it); tested the gasolene tank, holding up the gauge before an observant audience, and then handed the Mary Gee over to Acker.

"They say I married a widow for her money," observed the latter as he got in, "and have been a Congressman and a patriot for cash, but for simply falling over easy money this has it on them all."

He bent over and cranked the engine. There was a riot of explosions, a volley of snorts from the carburetor, a wildly excited flywheel reversing itself every other stroke;—and then stillness, profound and impressive.

A roar of derision went up from the float and three or four enthusiasts fell in and had to be fished out by the collar. Acker simply grinned. "Just stored up high spirits, gentlemen," he declared. "We'll have to show her that *I'm* on the job this time."

The Skipper said nothing but sat in the stern with a sad, sweet, interested smile. Acker grasped the flywheel firmly with both hands. He got the weight of his elbow on it and then

turned to the audience. "This time, gentlemen," he announced, "I'll show you how to control any little kick-ups such as we just had. All that is necessary is to impress your own personal force, gently but firmly, on the balky mechanism."

Alas for quarter-horsepower man when he really attempts to impede six horse of explosive energy! There was a violent snort, and angry, double-reverse kick, and Acker landed like a doubled-up jack-knife in the approved position to bite his own toes off. The Skipper added pity to the other expressions in that smile—an aggravating, infuriating, French sort of pity, of the kind to inspire a mad impulse to caress him with a boathook. Acker picked himself up and faced the squeals and catcalls from the float scornfully.

"Gentlemen, I'll tell you what I'll do," he called, "I'll diagnose her, just as she stands, without leaving my seat——"

"Aw, cut the college lecture stuff and go to it!" derided the float. "You're afraid to touch her!"

"Nonsense!" bellowed Acker, angrily. "Listen, you lunies, here's the logical cause and effect of this case——" An incredulous guffaw interrupted him.

"Order, there! Order!" commanded the Commodore, who had arrived on the scene. "Give the man a chance."

"It's this way," said Acker, not moving from his seat. "One of those spark plugs is cracked. I know it. Why? Because the uncertainty of her actions (wild applause from the float) is due to only one cylinder receiving ignition, while the other, on account of cumulative compression——"

"Tha's all right, old top, here's a new plug," shouted someone, tossing it out to them. The Skipper caught it and handed it impressively to Acker, who forthwith scrutinized narrowly both cylinders.

"Aha! Just as I said!" he declared triumphantly, holding up the after cylinder plug. "Cracked!"

The Skipper raised his eyebrows but vouchsafed no comment.

"Now, gentlemen," continued Acker confidently, after putting in the new plug, "this engine's going to *run*. I know it. It isn't a matter for argument, it's a statement of fact. She's just *got* to run."

She did;—backwards. The way the Mary Gee charged that float, rear end to, caused a mad scramble for safety on the hurricane decks of the upper dock. Acker wildly tried to make her go some other way, stopping her and cranking again and again like a madman, but the inevitable crash would have occurred if Jake and Bill, owning property rights, had not received her impact on their manly bosoms. She had no reverse clutch—she wasn't that kind of a lady.

"Strike two!" observed the Skipper benignly. "Well, we are arrived again at the float, anyway."

Acker ground his teeth. "It's progress;—she ran," he declared grimly. "Now we'll get her going forward next. Gentlemen," he called, raising his voice after the Commodore had again quelled the hoots and catcalls, "I can only explain that last performance on the ground that the idiots who own this boat have their timer hitched up in the wrong quadrant and never knew any better. For all I know they set it on the astern side when they mean to go ahead,—let's see—shove off, somebody." They pushed the Mary Gee a few feet clear of the float and Acker set the timer handle clear around and started the engine.

Bang, bang, bang, bang!! She went ahead half a turn, reversed and went astern half a turn,—then ahead again and then astern with the regularity of clockwork and the speed of a stamp mill, sneezing violently back through the carburetor at each reverse. Acker danced around perspiring, doing his best to interfere, but the engine had that trick down fine and proposed to show it off for all it was worth.

"Hur-aa-ay!" rang out a prolonged cheer from the float, "Bully-boy for Acker;—Yip, yip,—*Zrraa-ay!!* Get the hook, Doctor Cook, get the hook, hook, hook!" they yelled at him.

Acker finally shut the current off in desperation. "Now she'll sulk," thought the Skipper. "That nut must be clear loose by this time. She went backwards all right because she ran against the nut thread and tightened it up a bit, but this was the baby that loosened her." But all he *said* was "Strike three! Batter out!"

THE ENGINE OF THE MARY GEE HAD NO EQUAL FOR OBSTINACY

"Come on back to the float, Little Bright-eyes," called the gang tauntingly. "It isn't so far but what a boathook will do it."

"If I do I'll lick a few of you boneheads," growled Acker wrathfully.

"The club bets you a hundred dollars that you can't make the float," laughed the Commodore kindly. "Come on in and take it up."

"The club be damned!" retorted Acker testily. "But toll the bell, for here I come!" he added, whirling the flywheel.

The engine of the Mary Gee had no equal for obstinacy when it didn't want to do anything, and this was one of the times. Acker cranked, swore, pleaded, raved, diagnosed until his head ached, squandered brain force by the carload, but the engine was sore clear through and lent not the least ear to his overtures. Meanwhile the crowd was getting impatient, and demands to "start something," "shake it up," "hire a real mechanic," and "come in out of the wet" became steady and insistent.

"There's something radically wrong with this motor," declared Acker at length. "Have I your permission to take her apart?"

"Go as far as you like," grinned the Skipper indulgently, "no expert shall be refused the one thing that he *can* do. Don't break or lose anything; I want to be able to put her together again when you get through."

"You won't have to," gritted Acker, setting to with screwdriver and monkey wrench. No chicken artist ever dismantled a fowl as quickly and completely as did Acker that engine. Each piece as it came apart was examined with a sniff of disdain or a

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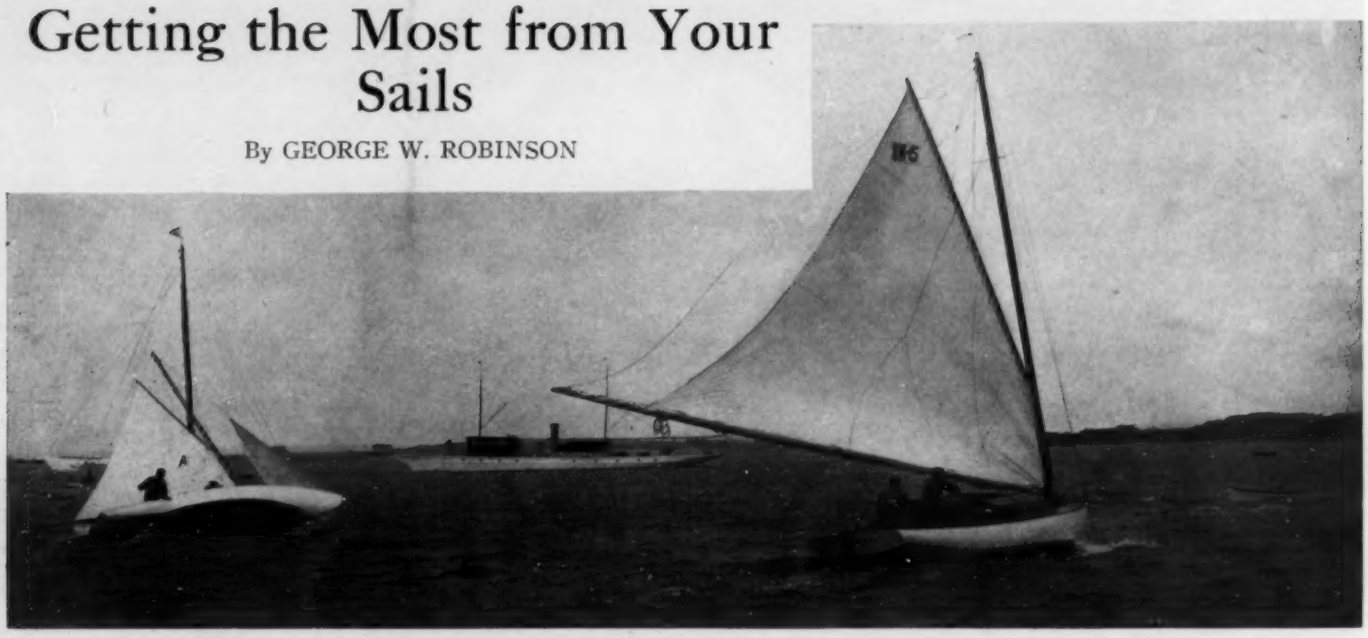
Getting the Most from Your Sails

By GEORGE W. ROBINSON

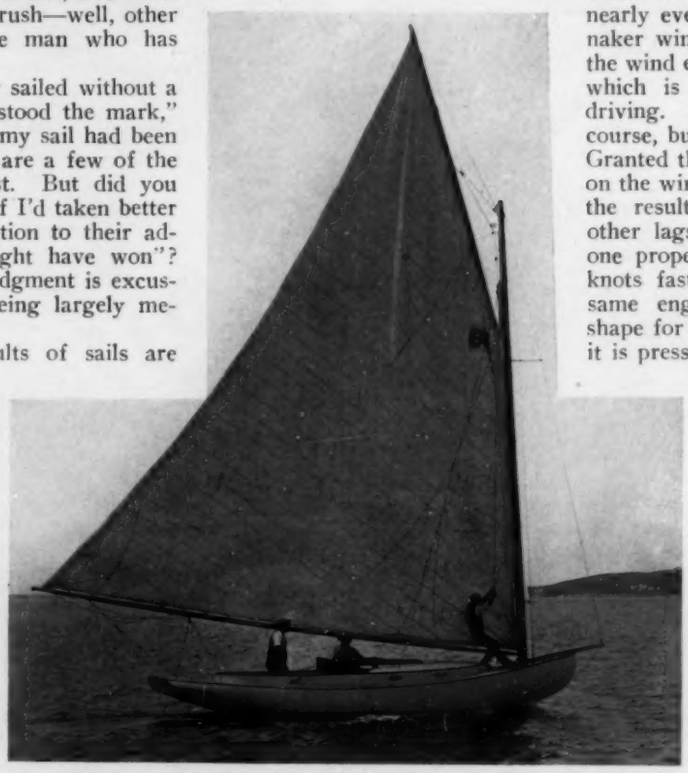


SUCH PUFFS AS THIS ARE LIABLE TO RIP A MAINSAIL HAULED OUT AS FAR AS THE ONE ON THE FOREGROUND

TAKING proper care of the sails and giving close attention to details of their adjustment are among the most important duties aboard any sail boat, for upon the condition and shape of these canvas propellers depends the speed of the craft. And who does not want all the "go" there is in his boat? Be he racer, cruiser, oysterman, coaster, fisherman or square rigger, this natural desire is felt, and when the other fellow lines up for a brush—well, other things being equal, woe to the man who has neglected his sails.

In yachting no race was ever sailed without a post-mortem. "If I hadn't overstood the mark," "if the wind hadn't shifted," "if my sail had been flatter," "if I'd had more draft" are a few of the reasons one hears for races lost. But did you ever hear an honest confession "if I'd taken better care of my sails and paid attention to their adjustment during the race I might have won"? There's the rub. An error of judgment is excusable, but the matter of sails, being largely mechanical, is "up to you."

A great many so-called faults of sails are really caused by improper bending, poor spars, wrong rigging, etc. The man who knows how to rig his mainsheet gear to counteract excessive bending of the boom, how to rig his gaff bridles so the spar does not buckle, and looks after the welfare of his sails in all weathers, is the one who gets the greatest speed out of his boat. It is only a question of giving a little thought and attention to details that are either unknown or very generally neglected by the small boat sailor. Proof of this assertion is found in nearly every one-design class, where the boats are supposed to be identical in form and size. There are generally a few boats which "clean up" their sister ships. Investigate and you will find that on these boats the sails, spars and running rigging are hung to a nicety, and when under way the sails are manipulated or shaped to meet every new condition of wind or weather that arises.



IN SETTING YOUR SAIL, PEAK UP HIGH ENOUGH TO CAUSE WRINKLES FROM THE PEAK TO THE TACK

Let us consider this matter of sail "shape." Down the wind boats with similar underbodies will run nearly even, for with a mainsail and spinnaker winged out it is only a question of the wind exerting a pressure on a fixed area which is proportioned to the hull it is driving. Skilful "playing" does count, of course, but that is not the point at present. Granted the boats run evenly, let them haul on the wind, *the* point of sailing, and watch the result. One eats right into it,—the other lags. Why? For the same reason one propeller will drive a given boat five knots faster than another wheel with the same engine—more efficient or effective shape for the available power. In one case it is pressure of blade on water and in the other wind against sail, but the principle is the same. Sounds logical, doesn't it? All right, let us log that point and go on.

How can we get this correct curve, or know we have it?

Have you ever seen an aeroplane and noticed the fore and aft curve of its planes? Well, you most likely saw that the curve was greatest at the entering end and ran nearly flat from the middle to the back. That, in general, is the curve we are talking about, and shows that a sail made with one curve, or the arc of a circle in its surface is wrong. The correct shape, properly de-

scribed, is a parabolic curve, or a curve running from the mast in a parabola, gradually flattening into almost a straight line near the leach. This may sound complicated, but it is much simpler than a description of some curves seen in neglected and misused sails. The picture of the cat boat accompanying this gives a fair idea of what is meant. You will notice how the draft is well forward, leaving the after part of the sail almost flat.

Opinions differ greatly as to how much curve a sail should have and where this draft should be located, some people going so far as to advocate a flat, board-like surface for the greatest driving power under all conditions. This last is certainly wrong, as one can readily notice on a light day, when boats with very flat sails are "dead." There is no law to settle the question as to how much curve or draft to use, and this is generally left to the experience of the sailmaker. But draft there must be if we are to obtain the best results. Hence this emphasis upon the importance of shape.

A great many people seem to think a sail once set needs no further attention. This is wrong. Every change in the wind velocity requires a corresponding change in the sail; as there is a most efficient propeller for every set of motor boat factors, so there is a most efficient shape and pitch of a sail for a given breeze.

In setting a mainsail the first thing that we must do is to get up enough on the peak halyard. Almost every one gets up enough on the throat, for even on very small boats all hands and the cook see if they can't break the luff rope. That's the reason sailmakers put wire luff ropes in the sails, although with proper handling a hemp rope would be better, as it gives and takes in damp weather the same as the cloth.

The peak needs to be hoisted until there are a great many wrinkles from the peak to the tack. Otherwise with the stretching of the halyard and a little give all over, the sail will quickly lose its shape.

One can readily see by the shadows on a sail any imperfections in the draft. In a well-setting sail the shadows cut a clean, true curve from peak to tack, more or less rounding according to the fullness or flatness of the sail. When the peak is not properly hoisted the weight of the boom pulls a ridge through the body of the sail from the throat to the clew, and the shadow plainly shows up this ridge. This is not as common an evil now that racing boats have come to the use of wire rope for halyards, but even with these an experienced racing man sets his sails and then goes out and sails around a while before the starting gun goes for a race. Shortly before this signal you will see the boat luff up into the wind and all hands swig up any slack that may have come with the drying and stretching of the ropes and canvas.

THESE WRINKLES ARE DUE TO SAIL NOT BEING HAULED OUT PROPERLY AT HEAD AND FOOT. THIS SAIL IS EVIDENTLY TOO LONG FOR THE SPARS

A GOOD EXAMPLE OF DRAFT IN A SAIL. BY LOOKING AT THE REEF BANDS YOU WILL NOTICE THAT THE DRAFT IS WHERE IT SHOULD BE—WELL FORWARD

In many instances the leach, or after edge of the sail, keeps up a constant fluttering between the battens when on the wind. When it flaps it sends a quiver through the whole sail and destroys half its driving power. Of course you cuss the sailmaker, whereas it is probably the fault of your boom and main sheet arrangement. In reeving the main sheet it is absolutely necessary that you do it so that the boom hangs straight, otherwise in a breeze of wind it will pull out of true, or bend, and make a hard or soft spot in the sail, and any unevenness in the sail is very detrimental to speed. Also look at your gaff and see if it buckles any. If it does, shift the bridles in or out and experiment until you get them in a position that will keep the gaff straight.

A leach that curls in and prevents the wind from escaping off the sail is something that should be corrected right away as it prevents the wind from getting *out* of the sail. It is not only a detriment to speed but is the cause of heeling the boat over a great deal more than she would if she had a flat leach. Hauling the head and foot out on the spars will often correct this defect. Some sails have a slight tendency to curl to leeward when first bent. This is a good thing, as the leach on a cross cut sail has a tendency to tighten. Remember another thing, be sure that your draw string is free.

Perhaps it might be well to see how the sail should be fastened to gaff and boom. By far the best method of making the head fast to the gaff is with a separate stop of marlin rove through each hole. Don't lace it round and round—half hitches are better than that old fashioned style. The ideal arrangement for the foot is the brass slide and track now used on all racing boats. Be sure your slides run freely, otherwise the outfit is more trouble than benefit.

Supposing, now, that you have the sails, spars and rigging in the best of condition and you come to the adjustments of the sail to suit different winds and sea. The hoisting or slacking away of the peak halyards only a few inches will sometimes make a great difference in the feel of the boat. You may have noticed how on some days the boat feels lively, moves easily and jumps away; and you have every confidence that you will win. Then, the next day she seems dead. What is the trouble? The bottom

EXAMPLE OF TIGHT LEACH WHICH THROWS A HARD SPOT INSIDE THE LINE OF THE BATTEN POCKETS. BE CAREFUL ABOUT SLACKING OFF YOUR QUARTER LIFTS

could not foul overnight. Everything is apparently the same. The trouble is that you haven't the proper draft in the sail for that day. The weather might be a little damp and the millions of pieces of fibre have shrunk.

You can regulate this draft in a number of different ways—by slacking or hauling out the foot of the sail so that it can go and come on the boom, by the set of the peak as mentioned before and by the roach reef. This last is one of the most valuable aids there is for getting driving power out of a sail. By its use one can get almost any shape in the body of the sail. There are a number of boat sailors who have never seen or used one of these slap, roach or boom reefs as they are called. For their benefit I would say that it is a reef which starts at nothing in the forward and after ends of the sail at the foot and describes a parabolic curve which conforms to the natural draft. It is, perhaps, six inches off the boom at its highest point. It has a lacing line which is rove through the eye holes and under the foot rope. You can haul down on any part of this and thus reduce the draft in your sail to suit any condition. Don't forget about this reef, for it is the most important thing aboard the boat when racing.

There may be two boats with similar hulls, yet you hear one owner say that he has a heavy weather boat and the other owner claims light weather qualities. Did you ever stop to consider that these boats would be good in any weather with the proper shape to their sails? If one boat has a flat sail she is fast in a breeze and slow in light airs, and if she has a drafty sail she is fine in light airs but no good in a breeze. Experiment and you will be convinced.

After we have tried various ways of shaping our sail, stand forward alongside of the mast and look aft. Observe the sail from the windward and leeward sides of the mast and you will be able to detect any imperfections. You may find some hard spots, which play the mischief with the speed of your boat. Get these hard spots out or you won't win the race. Now glance up the mast of your sail from leeward and see that you have a nice little draft under the jaws of the gaff. Walk aft and stand on the stern. From this position you will be able to get a good idea of the sail.

Don't read these suggestions and then forget them. If you expect to win, try them, make a mental note of all the causes and effects and you will be repaid for your trouble.

To keep your sails in good shape it is important to slack the head and foot of the mainsail when you furl it. Dampness can get under the best waterproofed cover that was ever made, even if water cannot, and cause the sail to pull out of shape if the head and foot are not slack.

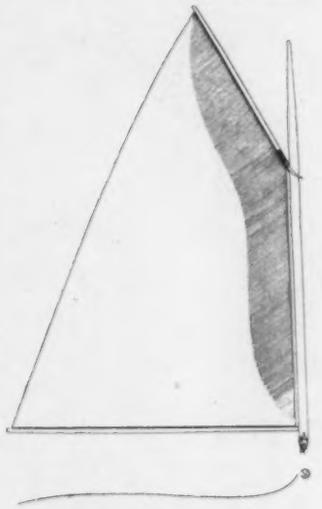
Questions are often asked regarding mildewproofing. "Does it hurt the sails?" "Would *you* have it done?" etc. If mildewproofing is done properly it does not harm the fabric. The acids in the treating bath dissolve the ash, protein and nitrogen in the cotton which collapses the hollow shaped cotton fibre. This prevents water from lodging in the cotton. There is no mysterious secret about it, and it is a great boon for boats where the sails are not aired every day. For racing sails it is not to be recommended, as it softens the body of the duck.

The care of headsails is just as important as that of the mainsail. In the smaller boats better care can be taken of the jibs because they can be unbent and stowed below out of the weather.

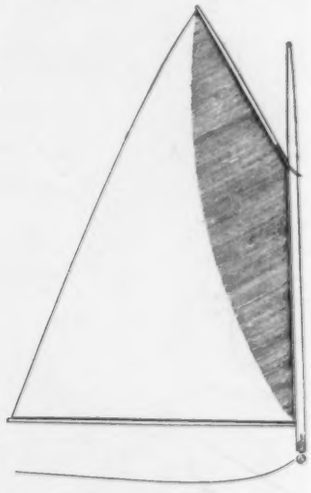
A jib is apt to "nigger heel" as quickly, if not quicker, than a mainsail, and its life aboard a racing boat is nowhere near as long as that of a mainsail, for when a sail pulls out of shape to that extent its draft is generally gone. The head and clew usually get pulled out of shape the most, and to offset this various means are employed. The head is sometimes fitted with a flat board, which also gives a greater area to the jib on a given hoist. This board spreader is scored around its edges to take the bolt rope, and in most cases is entirely covered with canvas. Some spreaders are now made of aluminum instead of wood.

The smaller boats, by having a long club about three-quarters the length of the foot of the jib, can so adjust the jib sheet as to make this boom automatically flatten the jib when hove down tight on the wind, and yet increase the draft when the sheet is lifted as the wind comes fair. What is of more importance, it

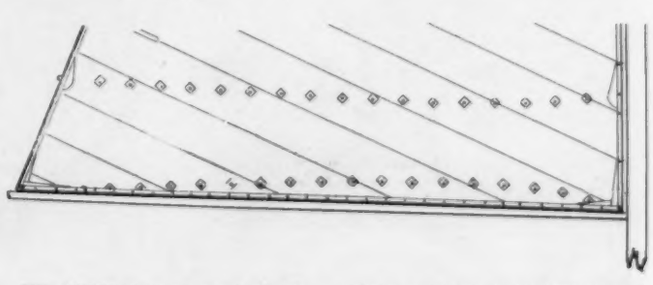
(Continued on page 364)



IMPROPER DRAFT IS INDICATED BY UNEVEN SHADOWS FROM PEAK TO TACK



PROPER DRAFT IS SHOWN BY THIS KIND OF A SHADOW



THE LOWER ROW OF EYES SHOWS A ROACH REEF FOR REGULATING THE AMOUNT OF DRAFT

Knocking about Lake Michigan in a Small Boat

Being the Log of the Auxiliary Yawl Flying Fish, of Chicago

By F. F. CURTIS

TO begin with a description, Flying Fish is an auxiliary cabin yawl, twenty-six feet in length overall, eighteen feet on the water and eight feet beam, carrying 370 feet of sail and equipped with a 6 H. P. opposed gasolene motor. She is a heavily built keel boat, with a cabin that berths four and is supplied with galley, refrigerator and an unusually full and complete equipment for a boat her size. The capacity of her fuel tanks gives her a cruising radius under power of some 120 miles. Her home port is Jackson Park Harbor, Chicago, some 7 or 8 miles south of the city harbor, on the outer edge of one of the largest of Chicago's parks—a yacht harbor which is the home of over a hundred yachts, power boats and cruisers.

As the owner of Flying Fish I was also the skipper, and the crew on this August cruise around Lake Michigan which we had planned was composed of Jim Horton, Peter Larson, a college student, and Doctor Cook (not the one of Arctic fame, however), a physician. Larson was dubbed "The Grub Destroyer" the second day out, which rather lengthy cognomen was soon abbreviated to "Dusty"; and Horton answered (when he felt like it) to "Sleepy"—from his predilection toward morning somnolence. The story of the trip is best told in the extraneous matter set down in the logbook.

Friday, July 27—The skipper, Horton and Larson put in an appearance by 10 A.M. and the day was spent overhauling ship and getting grub and equipment aboard. At 11 P.M., everything stowed, all hands turned in, leaving a call via the alarm clock for four in the morning. A message was received during the afternoon from Dr. Cook, the remaining member of the crew, to the effect that he was detained but would meet us the following morning at Chicago harbor.

Saturday, July 28—All hands were on deck at 4:30 A.M., the engine was started, the mooring line cast off and at 4:45 the Flying Fish poked her nose through the harbor gap and lifted to a long, easy swell from S. E. Mizzen and jib were set as we ran, the motor shut off, and the mainsail spread to catch the faint remains of a breeze from E. S. E., just rippling the surface of the swells, which sparkled in the morning sun. After a run of some seven miles, we dropped our mud-hook in Chicago harbor, where we intended to pick up our fourth man and make breakfast.

"Doc" came out in a launch before the sails were down, and, firing his suitcase below, dove after it to remove his "glad rags." Breakfast over, sail was made, the hook broken out, and we stood out through Chicago harbor breakwater by way of Van Buren Street gap, passing close astern the U. S. S. Dubuque, the naval training ship stationed at Chicago. The wind had hauled to N. E. and was picking up pretty stiff, but we held on, thrashing north for an hour or more. A big yawl passed us some distance to windward—making for port—and as the wind was increasing and a nasty sea picking up, we followed the mute advice of the glass and put back to Chicago harbor.

Sunday, July 29—Up at 5:30, and breakfast dishes washed by seven. The hook was then broken out and we got under way for Michigan City, Indiana,—course E. by S. ½ S. Found a brisk wind from N. E., and a good stiff roll to the sea. Hove the log, which indicated about six knots an hour. Our course brought the sea almost abeam, and the Fish rolled considerably in the trough.

The wind held brisk and at 3 P.M. sandhills were sighted off the starboard bow. At four o'clock the course was altered 1½ points north. This brought the wind slightly forward of the beam. At 4:30 we heard a siren—which proved to be that of the S. S. Roosevelt—sounding about N. by E., showing that we were to south of our course. We immediately swung to N. E. and at 4:50 made out Michigan City. The wind and sea were steadily increasing and we were unable to weather the pier-heads under shortened sail. After two unsuccessful attempts the motor was started and we held close, making the harbor under sail and power just as the pier-head light was lighted. (Auxiliary power is sure a fine and convenient thing!) Ran down the river under power and moored just behind the government lighthouse and life-saving station reservation and all hands piled below to dress preparatory to going uptown.

"Doc" and "Dusty" had stored their best clothes in a (supposedly) water-tight metal locker under the berths on the port side, and as they hastily reached in for the wherewithal to "doll up," there arose a weeping and wailing and gnashing of teeth. Amid sulphurous adjectives from the two and brutal howls of laughter from the balance of the crew the "duds" were hauled out for inspection, said inspection disclosing incontrovertible evidence that while the locker was watertight as specified no arrangements had been made to prevent bilge-water from slopping in over the locker-back when the boat rolled badly. Bilge-water on board the Fish is a synonym for a mixture of filthy water, dirt, crumbs, soup, scraps of tobacco, engine grease, sand, gasolene and cylinder oil; and no further explanation of the condition of the "duds" is needed when it is remembered that the Fish rolled. However, some second-best things were available, and after buying some shirts, picture postals, etc., we dined in state at the best hotel.

FLYING FISH WITH THE BREEZE AFT

All hands turned in a little after midnight and slept soundly until disturbed by the arrival of the S. S. United States in the early morning. Day's run 35 miles.

Monday, July 30th—All hands except "Sleepy" had breakfasted and were on deck at 6 A.M. Going out on the pier to inspect conditions outside we found a gale out of N. E. lashing the lake into combers. A steady glass indicated a continuance of prevailing conditions and it was decided to remain in port in preference to bucking a head sea all the way to St. Joseph, our next

harbor, 35 miles up the coast. The crew scraped an acquaintance with the lighthouse and life-saving station boys, and incidentally filled themselves and our tanks plumb full of water from an artesian well on the reservation. Made use of the delay by overhauling the rigging and cleaning ship, going uptown for lunch. At this port one of the crew deserted temporarily, making a street car trip to Benton Harbor to see a prize fight which was to be pulled off there. The balance of the crew spent the time looking over the town, which was extremely lively until the departure of the S. S. Roosevelt. Again inspecting the condition of the lake and weather, we found that, while the sea was still heavy, a rising glass indicated softer conditions shortly.

Tuesday, July 31st—Cast off and left the harbor under power at 8:45 A.M., bound for St. Joseph,—course N. E. ½ N. At nine o'clock set full sail, finding a light breeze off shore, E. by S. At eleven, the wind having continued light, could still make out Michigan City pier-head light astern. During this run "Sleepy" developed a mild form of lunacy, the existence of which was evidenced by an insane desire to start the stove, heat a bucket of water, chip in some soap, and boil our soiled towels, socks, white (?) duck clothing, shoes, handkerchiefs, waste, flags, carpet, and, in fact, everything he could lay hands on. He insisted that it was merely his instinctive desire for cleanliness, but the crew finally revolted when he wanted them to disrobe so that he could boil out their underwear.

Until five o'clock we drifted, unable to use the motor because we had overlooked filling the fuel tanks at Michigan City. About this time New Buffalo, 9¾ miles north of Michigan City, was sighted off the starboard bow, and heading in we dropped our hook off this village half an hour later. We found no harbor whatever, there being only two ancient and dilapidated piers extending perhaps a thousand feet out into the lake from each bank of a small river, which would make an excellent yacht harbor were it not for the sand-bar across its mouth. The water on the bar is so shallow that the dinghy grounded as one of us tried to row ashore after gasolene and he had to get out and walk. After some delay he secured five gallons, which seemed to be the entire stock of the town.

The advent of a yacht was evidently an affair of local importance, and the natives were very curious, coming out as far as possible on the broken piers to inspect the Fish and shout innumerable questions. Not wishing to lay here all night we started north under power about seven. At sunset there was dead calm and we were making good time. Sailing lights were set, and as no one wanted to turn in on account of the heat of the evening all hands sat around on deck, smoking and yarning. Everything went smoothly until about 10 o'clock, when the engine began bucking, the starboard cylinder missing. As all attempts to locate the trouble while running failed, the motor was shut off and we drifted along slowly, the engineer delving among gears and rods and messing around in the brute's thorax, trying to locate the diseased organ, which he did half an hour later. After performing an operation with some wrenches, screw-drivers, pliers, expletives and other necessary impedimenta, the motor was persuaded to do its duty and once more chugged along.

All went well until about midnight, when the starboard cylinder again lay down and went to sleep. This time the skipper repaired below and after some difficulty identified the trouble—a burned out coil. A spare coil not being on board, we proceeded as best we might under one cylinder, making perhaps two knots an hour. The skipper, during his investigations, had been working in an atmosphere of unexploded gas from the dead cylinder (the relief cock was opened to ease up on the other cylinder) and its effects, together with the heat, finally overcame him just as he came up the companion way to the deck. Dashes of cold water speedily revived him, but "the subsequent proceedings interested him no more"—to quote from one of our Western poets.

About two A.M. a light breeze came up from off shore and we made sail. St. Joe pier-head light was close abeam at 3:30, and the skipper was roused sufficiently to take command. The freshening breeze came from dead ahead as we turned the pier-head, and it was necessary to tack up the narrow channel against this and a head current in the St. Joe River; this occupied an hour or more, several million (estimated) separate and distinct changes of course, and exhausted the vocabulary of the entire crew, who were, without exception, tired, sleepy and grouchy.

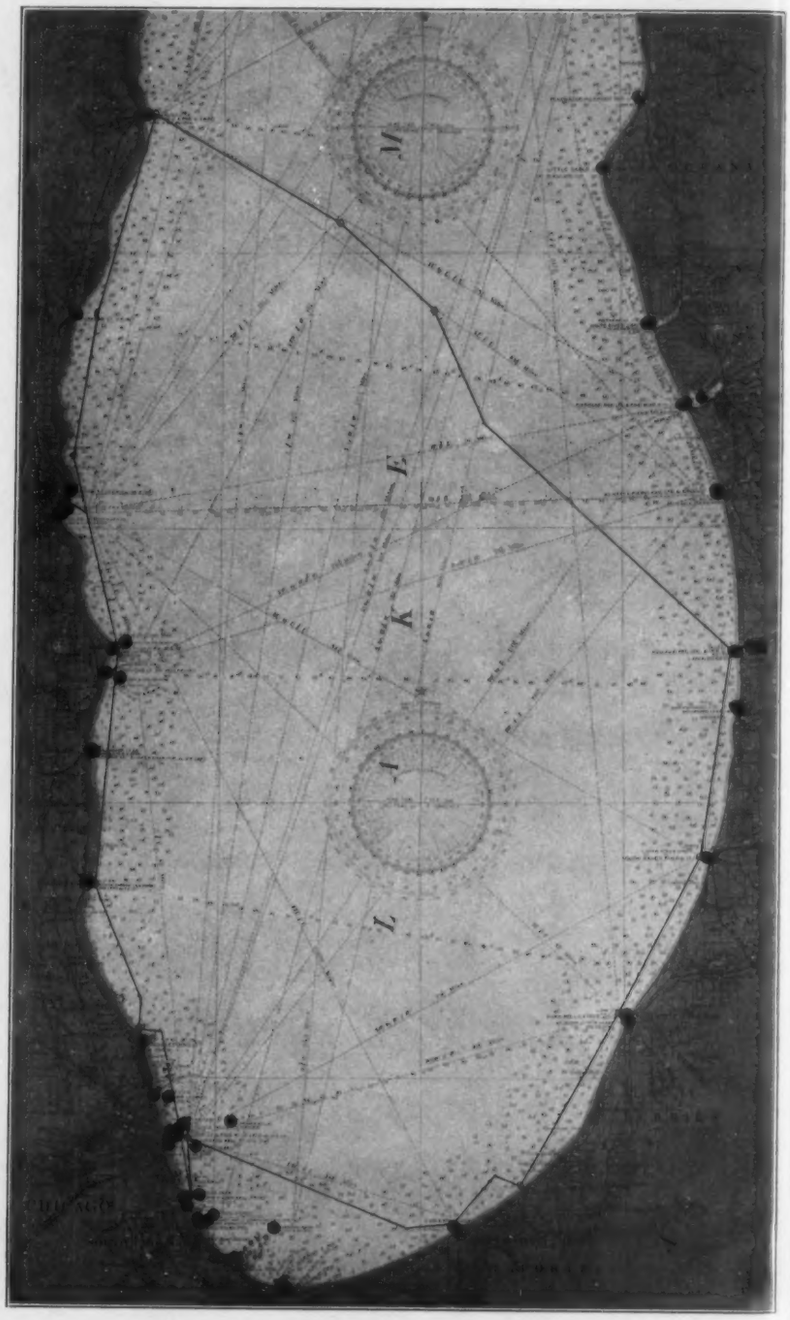


CHART OF LAKE MICHIGAN SHOWING THE ROUTE OF FLYING FISH

Made the yacht basin after 4 A.M., let go the hook, tied a stop or two around the sails, and all hands fairly fell below and to sleep. Day's run, 35 miles.

Wednesday, August 1st—This morning we snoozed until nine o'clock, recovering from last night's experience, after which we went ashore for breakfast and spent the balance of the morning overhauling ship.

St. Joseph is the middle one of a trio of Michigan towns which accommodate, perhaps, half the population of Chicago during the summer months, the others being Michigan City, our last port, and South Haven, 25 miles to the north. St. Joe is clean and well kept, and its principal industry is said to be the uniting in marriage of couples who arrive by every boat and train. It is reported that during the summer months there are more brides and grooms to the square inch in St. Joe than anywhere else in the Middle West. There is a fine bathing beach, and amusements of all sorts.

Thursday, August 2nd—This day dawned clear and intensely hot. We had intended to get started in the cool of the morning, but overslept and were not on deck until eight o'clock. After breakfast went ashore at the life-saving station to fill up our tanks with water from their well. About ten o'clock got under way, using the motor, and chugged along over water like glass, not even a ripple showing to indicate the light air from N. E. Course N. E. by N. ½ N.

As the day advanced the sky was like brass, heat waves danced up from the shore line, and the rays of the sun were reflected back from the calm lake as from a mirror. Spread the canopy over the pit and attempted to get some comfort in the shade, but it was too hot even to doze. Twice during the run to South Haven we stopped the motor and drifted while all hands cooled off by a plunge. At two o'clock we swung in between the pierheads at South Haven and made fast to a dock on the south side of the Black River, which bisects the city. South Haven lies on high land on either side of the Black River—a very picturesque stream, by the way. It is in the famed Michigan fruit belt, and is a bustling city all the year round. The summer months are its harvest, however. To the north and south along the lake shore there is a stretch of unsurpassed sand beach, left by the receding of the bluffs which line the coast, on the brows of which, for miles to the north and south of the city of South Haven proper, are perched resorts, hotels, cottages and camps, facing a picturesque drive along the top of the bluffs and with the beach right in their back yards. The Black River is alive with power boats and one is always sure to find half a dozen

MOORED AT SHEBOYGAN

DRYING OUT THE BEDDING AT MILWAUKEE

LEAVING SHEBOYGAN HARBOR

visiting yachts from Chicago moored here. Day's run, 23 miles.

Friday, August 3rd, was spent in port, overhauling and straightening up below. The main peak halyard began to show wear at the blocks and this opportunity was taken to unreeve it, cut off 30 feet or so of the worn end, and splice the cut-off part to the loose end with a long splice. This brought practically unworn rope at the blocks where the wear was greatest, and we decided that we would not need a new halyard until we reached home. In the evening we concluded that a beautiful moon and a brisk breeze from off shore were too good to be wasted. A suggestion from "Dusty" that we go for a short sail met with instant approval and we cast off, made sail, and settled down to an evening's enjoyment. Purely by accident we headed northward along the coast, and, smoking and yarning, were unaware when South Haven light dropped out of sight astern. "Doc" was the first to note the circumstance, and he suggested that we keep right on to Holland, which we did, arriving about 2:30 o'clock in the morning. Day's run, 27 miles.

Saturday, August 4th—After a late breakfast all hands went ashore to look over the place, and then discovered that we were still some miles from our intended destination. Black Lake, where we had anchored, is a rather narrow lake about six or seven miles long and perhaps a mile and a half broad at its widest part. It is connected with Lake Michigan by a short channel through what was originally a sand-split between two bluffs. On either side of this channel lie immense summer resorts—Ottawa Beach and Macatawa Park. The city of Holland lies at the head or eastern end of the lake. Weighing anchor about eleven o'clock, we left our berth off the Macatawa Yacht Club and, the wind being strong and puffy out of S. W., ran up the lake to Holland under jib and mizzen—about three-quarters of an hour's sail.

All hands went uptown for lunch, remarking as we passed up the main business street the strings of serviceable wooden shoes which hung outside many of the stores. We were told that the greater part of the population of the adjacent country, as well as of the city of Holland, was composed of either Hollanders direct from "the old country," or their immediate descendants, and that wooden shoes were still much worn by them.

The next day being Sunday, and Sunday in Holland being dead so far as amusement is concerned, Flying Fish was headed back down the lake and again brought up at her anchorage off Macatawa. We decided not to try it outside, as the gale of the day before was still blowing and the glass offered no hopes of a let up. There is always something doing either here or at Ottawa Beach—bathing, dancing, yacht racing, etc.,—and, al-

though Fish did not take part, we saw some close and interesting brushes between some of the yachts there. After spending a good part of the afternoon in the water, all hands turned in early but were awakened a little after midnight by a heavy bumping, and on going on deck discovered that an unusually fierce squall had caused Fish to drag her anchor and drift close alongside a big power boat. A few kicks of the motor brought us back to our anchorage; and, giving her a good scope, we had no further trouble and slept soundly, lulled into slumber by the patter on deck of a series of rain squalls which passed over about one o'clock. Day's run, six miles.

PINTA AND NINA, REPLICAS OF COLUMBUS CARAVELS, MOORED AT JACKSON PARK

Monday, August 6th—Breakfast was over by six. The wind had veered round to S. E. early the night before and had kicked up a heavy sea by morning, but as it had been blowing for three days and the glass was rising we decided to take advantage of what we concluded was the tail end of the blow to be on our way. At 8 the anchor was broken out and we stood out through the channel from Black Lake to Lake Michigan. Once outside, laid a course N. W. ½ W. for Sheboygan, Wisconsin, clear across the lake. As we made an offing we found that both wind and sea were stiffer than we had anticipated, and under jib, mizzen and three-reefed mainsail the Fish reeled off perhaps 6 knots an hour. As the Michigan shore dropped out of sight astern the wind blew heavier and heavier, flattening the seas to some extent, but ripping off their foaming crests as they broke.

We found that the mizzen made steering extremely difficult, so doused it. This eased her some, and the Fish tore along, staggering up the slope of a giant wave, poising for a long moment on the crest in the full force of the wind, then roaring down a seemingly interminable slope of dirty slate to an almost calm in the trough and plunging her nose into the opposite slope. Then, shaking her head clear and pointing the sprit at the lowering heavens, she would start up the next slope, the water foaming along the rails and spilling out over the stern. Hour after hour this performance was repeated. Even with the mizzen off she steered hard on this run, and a couple of times we had a close call on a jibe when a sea would catch her under the quarter, However, we hove overboard a bucket at the end of eight or ten fathoms of line and trailed it astern—a simple expedient which worked wonders so far as ease of steering was concerned, although it cut down our speed.

About six o'clock the wind slacked up considerably, but the seas rose proportionately. As we had had nothing to eat since breakfast "Doc" volunteered to make some sandwiches, it being impossible to cook anything. Just as he passed the plate of grub out an old "grandfather" broke over our stern, and as the Fish struggled out from under, the pit was filled flush to the deck and the sandwiches had disappeared plate and all, except one clutched desperately in "Dusty's" hand. Within a few minutes another sea popped us, and it was evident that we would have to crack on if we were to keep ahead of them. To set the mizzen was dangerous on account of the steering; to shake a reef out of main sail impractical; so we finally sent a man aloft to rig a preventer backstay, which done, we bore up until the wind was over our starboard quarter and set a small balloon jib. With this sail drawing the Fish fairly jumped from crest to crest, although we feared for the mast, as the wind was beginning to come in terrific puffs.

It was dark by now—dark as a stack of black cats, as the saying is,—except for the pale white gleam of the combers as they broke. Watches were set, "Doc" and "Dusty" going below and "Sleepy" and the skipper on deck. The former sat aft with his arms locked around the mainsheet and his head on his arms, and the skipper was intent upon his task of guiding the Fish, when his attention was attracted by an unusual jerk on the mainsheet. A quick glance around and "Man overboard," roared the skipper, as he put the helm hard down. "Dusty" and "Doc" piled up from below, dashed aft, and reaching down over the side hauled a dripping figure on deck. Weighted as "Sleepy" was, in heavy clothes, boots and oilskins, the fact that his arms were clasped around the mainsheet was the only thing that saved him from a watery grave. Had he gone adrift, we never could have found him in all that smother. "Doc" dragged him below.

As the Fish lay in the wind the light sail forward whipped and cracked and the spar fairly jumped, buckling and creaking, while the shrouds jerked and strained. "Douse that jib!" howled the skipper, as the boat went over on her beam-ends. A ripping, tearing sound arrested our attention; something caught the skipper a whallop across the back of the neck—the backstay had carried away. "Dusty" and "Doc" crawled forward and doused the sail which was already whipping itself into ribbands, just in time to prevent everything carrying away, and the Fish came up and lifted more easily over the seas.

All hands were busy for the next quarter hour. The sea-drag—an ungainly contraption that had never before been used, was always taking up valuable space and had been fluently and continuously "cussed" for three years—was now dragged forth as a God-send.

(Continued on page 362)

FOX POINT

"SLEEPY" COMES ON DECK

WHITEFISH BAY

The Month in Yachting

A GUSTY DAY FOR THE SCHOONERS ON LONG ISLAND SOUND

THE annual meeting of the American Power Boat Association, which was held in New York on February 23rd, proved to be the liveliest meeting that has ever been held by that organization. Some eighty delegates were present and the principal matter under discussion was, of course, in regard to the rules. After considerable wordy warfare the American Power Boat Association formula was changed slightly, as applied to speed boat classes only. This change was unimportant, being merely a change in one of the constants used in the formula, and was adopted with an idea of equalizing the performances of different boats. It was shown that the new rating formula, as applied to the performance of a number of high speed boats of last year, worked out more equitably. This new rule does not apply to cruising classes, the rating formula for which remains the same.

The other point taken up was the separating of hydroplanes from displacement boats, and the rock on which the meeting split was how to define a hydroplane. As no satisfactory definition could be arrived at the whole matter was left to a committee consisting of H. J. Gielow, M. M. Whitaker, Clinton H. Crane, W. H. Fauber, Irving Chase, Geo. F. Crouch and Mr. Clark.

While it may seem to the layman an easy matter to define a hydroplane, technically it is a very difficult thing to make a satisfactory ruling on this point. If any boat that appreciably lessens her displacement is a hydroplane, then practically every "V" bottom or flat bottom boat that lifts at all when under speed can be classed as such. The development of the hydroplane has upset all previous theories in regard to construction of high-speed boats.

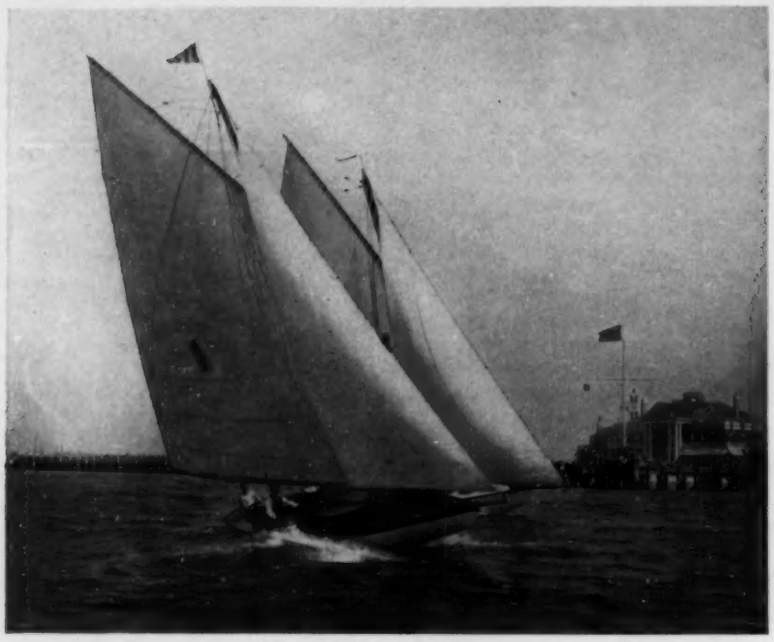
A legal question was also brought up, in that all action tending to change existing rules could not be legally made at this meeting, owing to a clause in the by-laws which made it imperative for notice of such proposed change to be sent to the members previous to the meeting, a detail which had been apparently neglected in calling the meeting together. So much feeling was engendered at the meeting that the clubs composing the Hudson River Power Boat Association, which form a strong part of the membership of the A. P. B. A., later withdrew in a body from the Association. This action was hasty and regrettable and it is hoped and believed that this Association will reconsider its action and come back into the fold.

There is no question that power boating needs a strong governing and advisory body to properly look after its interests. Organized boat racing of every kind has always prospered best under guidance of such associations, as is witnessed by the positions held by the various yacht racing associations along the Atlantic Coast and Great Lakes. The American Power Boat Association has undoubtedly done much for the sport and, probably, much of the present dissatisfaction that has been shown in regard to it, or any other governing body, is due to ignorance of the ethics of the sport by those who have taken up power boat racing in the past few years. They have not yet learned to make personal interest subservient to the general good. This will, in time, be outgrown, and the chance is large for some strong organization in the power boat field to coalesce the various interests and factions that are now fighting and bickering among themselves. Some radical step should be taken in this direction.

HYDROPLANES AND DISPLACEMENT BOATS WILL NOT BE SEEN RACING IN THE SAME CLASS UNDER A. P. B. A. RULES THIS YEAR

The American Power Boat Association has, among other things, during the last year submitted plans for the promotion of several limited or restricted racing classes, which, if its members would but build to them, would be one solution of the present racing problem. A properly restricted class is probably the ideal way to race power boats, but as yet no very determined effort has been made to establish racing on this basis.

Out on the Pacific Coast the prospects are bright for a renewal of the international racing with the Canadians by the revival of the races for the



THE HANDICAP CLASS OF GRAVESEND BAY HAS DONE MUCH FOR RACING ON LOWER NEW YORK BAY WATERS

famous Alexandra Cup which has been safely locked up in Vancouver since 1909, when a bitter controversy marked the breaking up of the race of that year between Spirit II and Alexandra, which were competing for the cup. The contention at that time was that the American craft, Spirit II, was a freak vessel built to beat the rule, on which ground the Canadians have stood ever since. In accepting the challenge for a new race the Royal Vancouver Yacht Club insists that Spirit II must comply this year with the international rule governing the 29-foot class, and the owners of this yacht have agreed to make any changes necessary to make her eligible. This will be a good thing for the sport on the Pacific Coast, as there have been but few sailing races of more than local importance in those waters for a number of years; and sailing always receives a boom from such events. Even the sailing yachtsmen have a whole lot yet to learn as to the proper spirit of sportsmanship and fair play, too many of our large events being killed by bickering and charges.

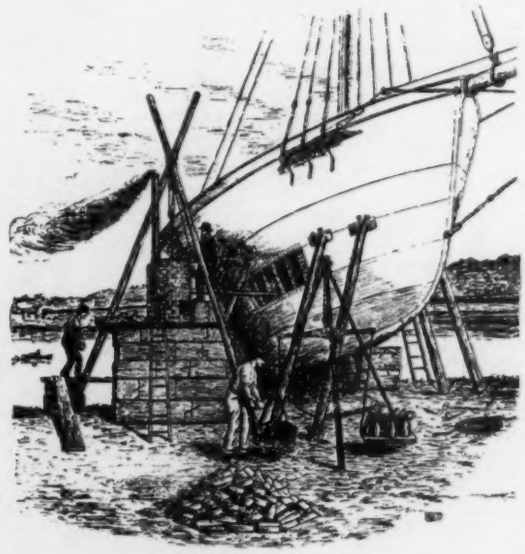
While there may be no new large sailing yachts this year, big schooner racing should still be of the best, if all the yachts that were out last year are raced this season, as at present seems likely. Last year schooner racing saved the season from mediocrity among the big craft, and there are enough big events this year which any owner will find it worth while making a bid for. There has been a rumor that Robert E. Tod's Karina would go across the Atlantic, but, even so, there are possibilities of a Brenton Reef Cup race or a tussle for the Cape May Cup. Both the Eastern and New York Yacht Clubs will have a very attractive program this season.

I have had occasion to speak of handicap and interclub racing to keep alive interest in the sport among the older boats. Such work as the Interclub Yacht Racing Association of Massachusetts, the Handicap Class of Long Island Sound and the Gravesend Bay Handicap Class are doing might well be followed in other localities. The Gravesend Bay Handicap Class has not grown as it should in the last few years though it numbers in its fleet such boats as Joy, Essex, Miana and other boats of the "Q" class, whose racing days in the regular classes are over. An effort is being made by the Gravesend Bay Racing Association to take over the class and try to boom it. Against this action the officers of the handicap class have protested vigorously, feeling that they are qualified to build up the class themselves.

Word has just come from the other side of the breaking up of the old cutter yacht Galatea, which travelled across the Western Ocean in 1886 to have a "shy" at the America's Cup. This was in the days prior to the time when America's Cup yachts were racing machines that had to be towed across the Atlantic. It was at a period when the New York Yacht Club welcomed a challenge and when members could be found willing and anxious to build for the defense of the famous mug. It was a gallant attempt that the Galatea made to win the cup—one of the most ideal and, in a way, most romantic of them all. It was in 1886 that Lieutenant Henn, the owner of the Galatea, challenged for the cup, and the boat that was built to meet her was the Mayflower. The Yachtsman (English) speaking of the attempt says:

Lieut. William Henn, the gentleman for whom the Galatea was built, was an excellent example of the best type of Royal Naval Corinthian, and his wife was happily as fond of yachting as he was. The consequence was that they spent so much time on board their yacht that it was for long spells at a time their home. Lieut. Henn sailed the Galatea to and from America in connection with the Cup races, and he also took a large share in sailing her in the races themselves. He was accompanied in his quest for the Cup by Mrs. Henn, and they became very popular with the yachting people of America; with all people in fact who could appreciate the romantic manner in which they were carrying through their adventure. Much has been made, and rightly made, too, as to getting the more recent challengers safely in America, consequently it may be interesting to recall a few lines from a letter of Lieut. Henn (written to a contemporary) on Galatea's voyage to America. Galatea sailed from Plymouth on June 30th, 1886, and arrived all well off the Clubhouse of the Eastern Y. C., at Marblehead, on August 1st. The passage was made by the Azores, and when off Flores, which was reached on July 14th, Lieut. Henn wrote:—"We have had but a slow passage so far; but ever since we left Plymouth had nothing but light winds, from eastward at first, and latterly from northwest. The sea has been like a mill pond, and we could have made the voyage so far in an open boat. One has been wishing for the mainsail and jackyard topsail to get us through the water. I suppose we'll ultimately fetch America, but unless we have a change in the weather it will be a long job."

As many of the present generation hardly know what lead mines these old cutters were, the reproduction of a contemporary



Courtesy of The Yachtsman.

RUNNING THE CUTTER GALATEA'S LEAD KEEL BEFORE LEAVING FOR AMERICA, APRIL, 1886

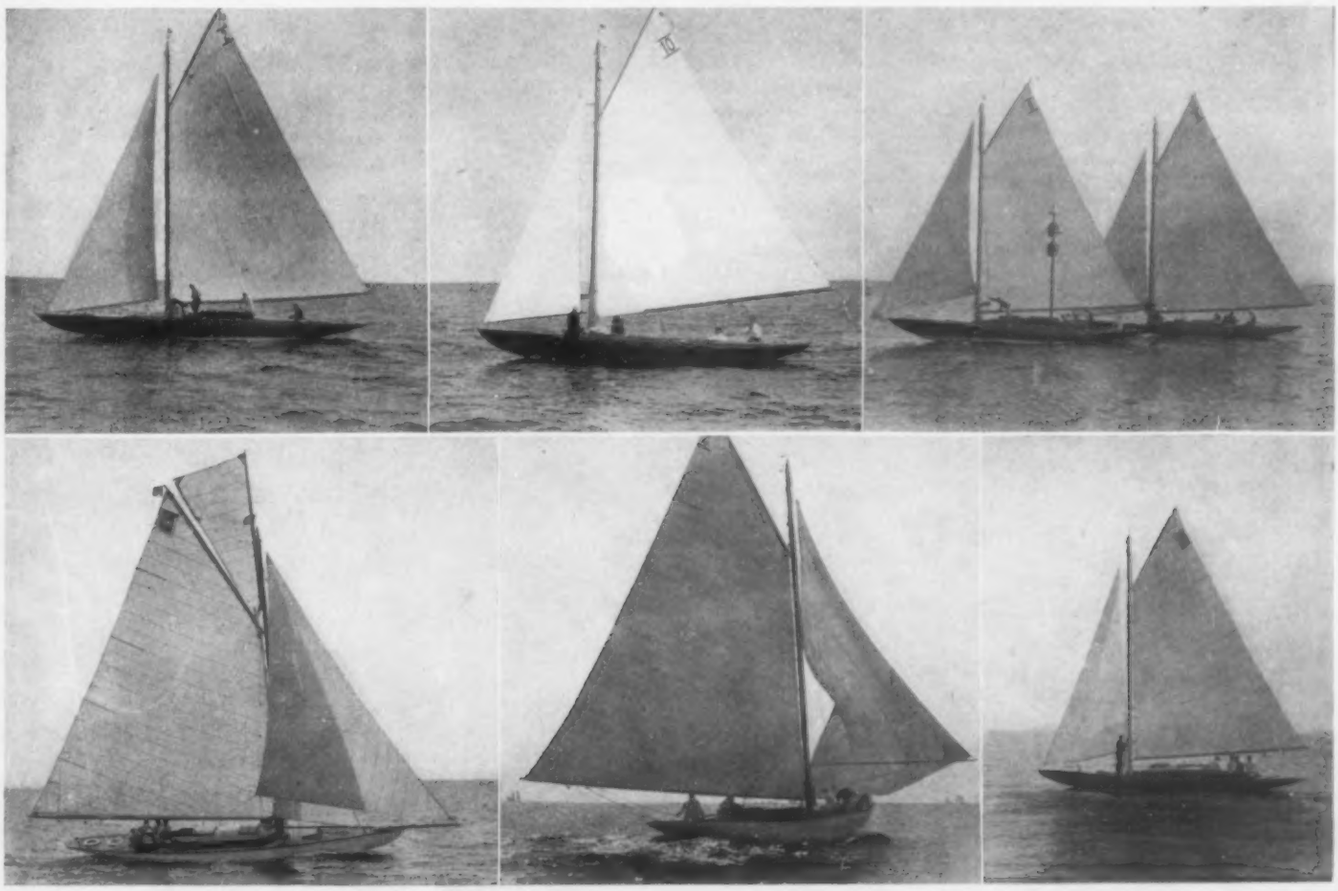
drawing which we publish here shows Galatea receiving her final preparations before leaving for America, when she had the whole of her lead keel cut out and re-run. Like most other successful yachts built at that time Galatea was of all steel construction. There was no outside keel, frames and planking being carried around the bottom and enclosing the lead ballast which was run inside between the floors. Her designer, the late Beavor Webb, considered these spaces were not properly filled and he had the whole seventy-odd tons removed and run in solid. The breaking up of the Galatea removes another link of the chain that binds our present-day yachting to the past.

The Western Power Boat Association has fixed upon Chicago as the meeting place for the 1912 annual Western Power Boat championship regatta, and the officers of that organization, headed by Commodore E. S. Osborn, are laying plans to have this one of the biggest meets of the year. Western yachtsmen are going into it with characteristic enthusiasm and the regatta will have the backing of the Chicago Association of Commerce. The committee has already secured promises of $30,000 in cash and prizes, which would indicate that this regatta will be the biggest thing of its kind ever undertaken in the history of the sport. Here's wishing the Western Power Boat Association and its Regatta Committee luck in the undertaking.

Our English power boat brethren die hard, as is shown by the race we are to have for the British International Trophy this year, details of which will be found on another page in this issue. It seemed, after the showing the British team made last year, as if the Englishmen would not feel that there was enough incentive to send another team to this country, but they have come back harder than ever, and will send two and possibly three boats to have another fling at Huntington Bay, or wherever the race is held.

Some of the Racing Fleet Seen at Finland Last Year

The Fifty Year Jubilee at Helsingfors Brought Together 130 Yachts Representing Northern Europe. Here Was Seen the Product of Some of the Most Noted Designers of the World



DEFENDER, 9 METERS, DESIGNED BY WM. GARDNER, AMERICA

ORESTES, 8 METERS, DESIGNED BY B. B. CROWNINSHIELD, AMERICA

MURANIC AND CYPRIA, 8 METERS, DESIGNED BY G. L. STENBACK, FINLAND

LUCKY GIRL, 8 METER RATER, DESIGNED BY WM. FIFE, ENGLAND

JOLANDA II, 9 METERS, DESIGNED BY HARRY WAHL, FINLAND

AYRA, 7 METERS, DESIGNED BY G. L. STENBACK, FINLAND

Some Conveniences on Small Yachts

Hints as to Possible Improvements When Fitting Out. By Making Use of Every Available Inch, More Room and Greater Comfort Can Be Secured

By C. F. FRANCIS

IN knocking about among boats and boatmen for many years, it has been my observation that the average small yacht is sadly deficient in the matter of those little conveniences that add so materially to the pleasure of life on the water. By "small yacht" is meant a boat of 30 feet overall length, and under. Larger yachts are usually well fitted out, but the small yacht sailor has, with few exceptions, been wont to adventure on his extended cruises and week-end sails with no more elaborate equipment than a roll of blankets and old clothes, an oilstove (perhaps), a bag of hardtack and a case of beer. Whether this condition be due to his lack of appreciation of the possibilities of his boat, or to his innate indolence, each individual must answer for himself. If the latter cause is to blame there is but little hope for the man; if the former, he may wake up to the fact that every small yacht (except, of course, racers, which are designed to produce speed and discomfort in equal parts) has boundless possibilities.

I once became the owner of a small sloop, 24 feet 10 inches long overall, 8 feet beam and about 3 feet extreme draft—a sort of half-fin type, with a centerboard housing in the deadwood and all outside ballast. When I purchased her she was just a bare hull and rig. This sloop was changed into a yawl—which is irrelevant—and after a year spent in experiment and study of the possibilities of the boat, I was able to install, without material loss of room, conveniences which rival those of the average 35-footer.

It is not necessary to pay a boat builder a fat sum to make these changes, the average yachtsman being mechanic enough to do most of the work himself; or is it necessary to tear the whole boat apart. The most important thing to remember in planning the interior arrangement of a small yacht is that *inches count.*

HEAD ROOM

As to head room, full standing room usually is out of the question, but it should be possible to secure more than four feet in any small yacht. Drop the floor an inch or two, increase the height of the cabin house or put a little more crown in the roof. Most small yachts have dinky little cabin trunks, worthless for practical purposes, and a high cabin house is not as unsightly as might be supposed. I increased the head room in this boat from 3½ feet to nearly 4½ feet—53 inches, to be exact—in the manner mentioned above.

LOCKERS

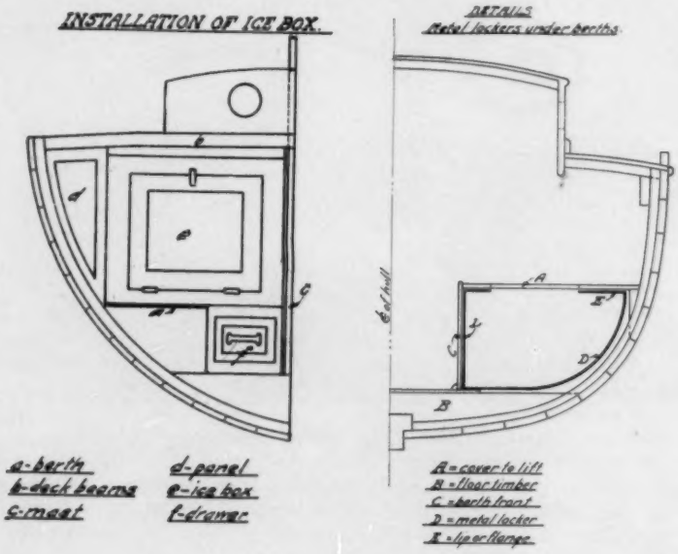
As a rule there is a lamentable lack of storage and locker room. Lockers large enough to hang up clothes occupy valuable space, but there is no excuse for the existence of the many makeshifts which are found, which result in the yachtsman going "uptown" looking like a deckhand off a tramp steamer.

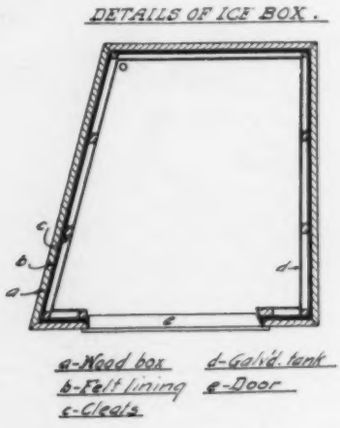
The best arrangement I have found is to raise the berths or seats up to eleven or twelve inches and install galvanized tank lockers under them, opening at the top. Drawers are not feasible, as they do not utilize all the available space, and are in the way when pulled out. Any tin shop can make these tanks if furnished with templates the exact size of each end of the proposed locker. The finished lockers may be installed by simply taking up the top of the berth and dropping them into place. Be sure they are soldered up water-tight, and be *very* sure that a lip or flange extends over the top for ten or twelve inches from the back; otherwise the yachtsman is liable to find that when his boat rolls down bilge water will slop in over the back of the locker, with lamentable results as to the contents thereof. If properly made, the lockers will keep clothing as dry and neat as if hung up in a wardrobe at home.

While on the subject of storage, berth hammocks, such as are used in Pullman cars, make handy catch-alls for temporarily discarded white ducks, sweaters, etc., that are usually left lying about on berths or floor. Hang the hammocks as far back under the decks as practicable, and they will be out of the way even when stuffed full. At a pinch the yachtsman's "glad rags" may be stowed in them without acquiring too many wrinkles.

ICE-BOX

A refrigerator is another thing that few small yachts possess, and if there is one, it is usually under the floor of the cockpit where it has to be torn out if power is installed—and many of the little fellows are putting in auxiliary power, nowadays. A





locker such as described above can be used, but it is unhandy and a makeshift at best. The most available space is forward where spare sails are ordinarily stowed, and the way this valuable space is usually allowed to go to waste is abominable. Nobody knows how much can be crowded in "up forward" in a small yacht until he tries. The ice-box may take up the whole of one side forward, from the mast to the planking, and be as deep as the contour of the hull will reasonably permit, the front of the box being just about even with the forward end of the cabin trunk. It may extend from the level of the berth-top to the under side of the deck beams. Its capacity will be surprising. I can get a hundred pounds of ice in mine, and still have room for a good many bottles of grub.

But don't try to build it in; it can't be done, for under the decks forward the space, while liberal, is so shaped that a man can hardly change his mind, let alone swing a hammer. Build the refrigerator outside and install it afterward.

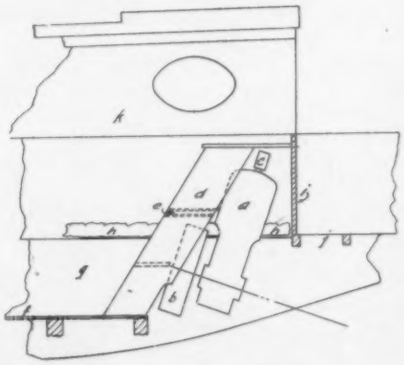
They are simply constructed. Make a box as per measurements of the space, with a door in the front, and leave the top of the box off; line the box with felt; nail in some ¾-inch battens over the felt. Have the tin shop make from measurements a galvanized tank, open at the front and with a drain pipe in one corner, to fit inside the battens. Fit in the tank, tack the edges to the wood around the door opening, screw the top of the box in place and the job is finished. It ought not to cost, complete, over a few dollars and will prove very satisfactory.

GALLEY

At the mention of a galley the small boat sailor throws up his hands in despair, while as a matter of fact it is not impracticable to fit up one that is worthy of the name. Owing to the limited space anything but a liquid fuel stove in a boat of this size is out of the question. Several kinds of stoves are available—gasolene, blue-flame kerosene, denatured alcohol, etc. If an alcohol stove is used, those with the detached tank are preferable; they are small, clean, easily installed and operated, and give a hot gas-like flame.

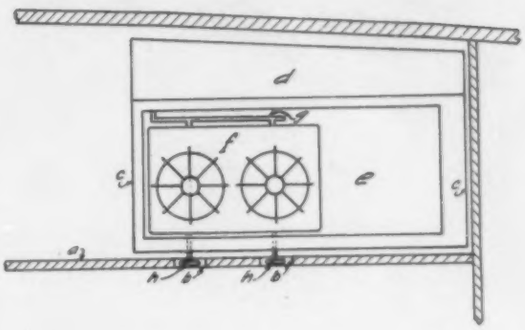
The alcohol stove may be installed in one of the metal lockers above described, a hand-hole being cut in the berth-front for the needle valve which controls each burner, and the stove fastened in the locker so that the valve-handles sit in the hand-holes flush with the berth-front. The stove should sit low enough so that the locker cover will fit over. When in use, the cover is removed, and the berth-top around the opening prevents cooking utensils from sliding off. If the metal lockers are reasonably long (say three lockers to each side of the cabin) the stove will hardly occupy more than half the space in its locker, the balance being used for a storage space for pots and pans, dishes and tableware.

INSTALLATION OF MOTOR



a-cylinder
b-flywheel
c-ignition
d-stairs
e-step to slide
f-floor
g-front of berth
h-cushion
i-after cabin bulkhead
j-floor of cockpit
k-cabin trunk

DETAILS - INSTALLATION OF STOVE



a-front of berth
b-hand holes
c-metal locker
d-flange on metal locker
e-opening left by removal of locker top
f-two burner alcohol stove
g-fuel pipe from tank
h-needle valves

In any yacht where a separate galley is not possible it is difficult to prevent culinary equipment, if there is any, from obtruding itself to the detriment of appearances; with the arrangement above described, when the locker cover and cushions are in place everything is out of sight and there is nothing to detract from the neat appearance of the cabin.

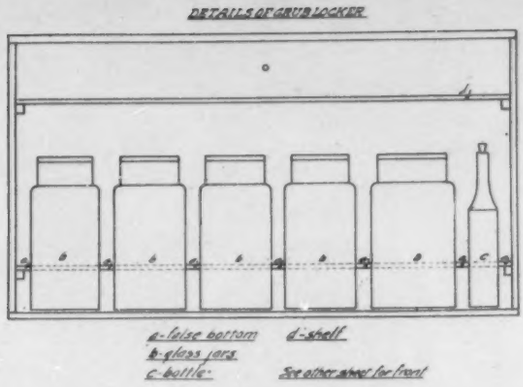
TOILET

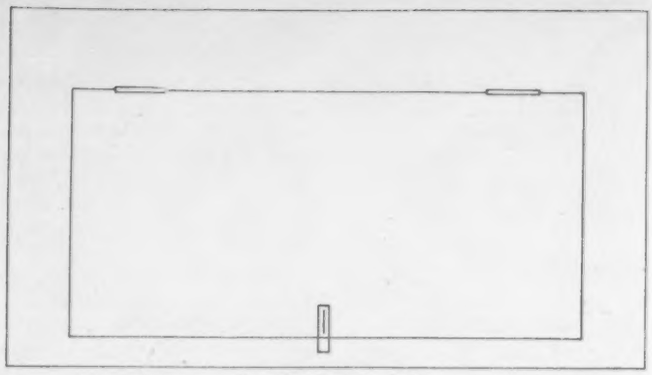
A closet is another convenience seldom found aboard a small yacht. Few things are more desirable, however, especially if friends are entertained to any extent. In those boats that do have them, they are usually installed under one of the seats or berths, and some are even installed in the middle of the floor. In both instances privacy is lacking. It is worth while to sacrifice some room to secure a partitioned or curtained-off space, and by a little study this can be secured at a minimum loss of room, the location being dependent upon the type of boat. I installed mine forward, opposite the refrigerator. The cabin trunk was 8 feet 6 inches long; 15 inches aft of the forward end of this trunk I put in a partition of half-inch beaded stuff, running up and down, from the planking in to the line of the berth-front; forward of this partition I installed the closet, bringing the bowl directly under the small corner of the cabin trunk and the pump under the forward deck. From the edge of the partition a rod runs along a carlin to the line of the berth-front opposite and a curtain draws across, providing ample privacy. Back of the closet an ordinary box with a hinged cover makes an excellent locker for linen.

INSTALLING POWER

Many owners are now installing auxiliary power. Without discussing the merits of this, and assuming that it is desired to install such power, and at as small a cost as possible, the location of the motor is the first thing to be considered. If the hull was originally built for power installation there is probably a bridge deck aft of the cabin, which settles the location of the motor at once. If, however, the yacht in question is a "simon-pure" sail boat, the chances are that the run is so flat it would be impossible to set the motor further aft than the after end of the cabin, even if a bridge deck be built; so the old ice-box and companionway ladder will have to be torn out and the engine bed bolted in their place.

In the selection of a type of motor the question of space is again the prime factor, which means a one-cylinder motor as small as is consistent. I have found that for boats of the size treated of in this article a 4-5-hp. or a 5-6-hp. will answer all





Door for Grub Locker.

purposes. Less than 4-hp. will not drive a sail boat type of hull into a sea or against a fair current; 6-hp. will give any sail boat up to 30 feet o.a., and not too tubbily built, a speed of 5 miles an hour; and over 6-hp. is waste, because it is difficult to get much more speed out of such a type of boat without excessive power.

As between two- and four-cycle motors the considerations of space and weight advise two-cycle, which are smaller and lighter for the same power and have fewer moving parts. It has been claimed that the two-cycle type is not as reliable as the four-cycle, but my experience has been that almost any battered old chunk of metal built on the two-cycle principle, if *equipped with a good carburetor and an efficient ignition device*, will run and keep on running as long as the gasolene and oil last. Also, it can be run either way provided a plunger pump is used.

As to lubrication I have found the simplest method is through the gasolene supply. Should grease be used in the main bearings it will be money well spent if a couple of automatic-feed grease cups are purchased in place of the hand-screw cups usually supplied. The automatic cups cost a little more, but with the lock handle released when starting, no further attention is required. They may also prevent ruined bearings, especially where the yachtsman is a novice in the use of power, or goes out alone to any extent.

COMPANIONWAY

With the motor installed where the companion ladder ought to be, what is needed is a flight of stairs! At first blush it may seem that stairs will occupy a lot of room, and they do take up some. Besides, the name sounds out of place on a small boat. However, unless one desires to climb over the motor, stairs are necessary. If they are given a fair pitch and the top step is made extra wide, it will be found that three steps will do the trick. If they are arranged so that the top step covers the cylinder head, the second step comes directly over the flywheel and the bottom step just forward of the flywheel, it will be found that this economizes space and adds to appearances by practically covering all the machinery.

In most such installations it is necessary to remove the stairs (an inconvenient arrangement, to say the least) in order to operate the motor. If the second or middle treads as above described be arranged to slide into the upright side pieces, by simply sliding them out, the motor can be operated without moving the whole stairway, and once the motor is running the steps can be slid back into place.

PROPELLER HINTS

The reversible propeller is preferable to the gear clutch for this class of work, for reason of space economy and weight. With it, it is possible to set the motor further aft than if a reverse gear intervened. A feathering propeller is not necessary, and so far as the drag of an ordinary propeller is concerned, it may be practically eliminated by using a two-blade wheel and bolting the coupling together in such a manner that when the motor is at rest, off compression, the blades of the propeller house vertically aft of the deadwood.

Bronze shafting is preferable to steel, even on fresh water. Above all things, use an inside stuffing-box with a stern bearing outside. Nothing is more irritating than to find that an outside stuffing-box has developed a leak, especially as an auxiliary is not as easily handled as a launch. The chances are that the yachtsman has neither the time nor the inclination—nor, possibly, the facilities or the price—to have his boat hauled out and the stuffing-box repacked. Result, a wet boat for the balance of the season; and a leaky, wet boat is just what Gen. Sherman said war is.

MISCELLANEOUS

Loose boards or holes in the cabin floor for pump apertures are to be avoided. If a short length of hose with a strainer on one end and a coupling on the other be run from the deepest part of the bilge aft to alongside the motor, it can be coupled to the suction end of a power pump, or to a "Wurkeze" located in the cockpit, thus avoiding a dirty job below.

Curtains for the port-lights add greatly to the appearance of the interior of the cabin. They should cost nothing if the yachtsman has, perchance, a wife or a best girl. The material should be soft and of light weight, such as silk.

GRUB

Now, a final suggestion as to carrying grub. The average small yacht (and, alas, even some of the larger ones) has no convenient or adequate arrangements for stowing this necessity. A certain brand of coffee is purchased because it comes in a pasteboard carton; sugar is shoved in a locker in a paper sack, which probably will spring a leak and scatter its contents over the floor at the first opportunity; butter is left in the wooden dish or paper carton in which it is bought; salt hardens to rock-like consistency in its original cloth bag, and has to be pulverized with the monkey-wrench when the salt-shaker needs refilling, and the pickle jar and the catsup bottle play tag around the cabin every time there is any sea on.

Proper stowage facilities for these commodities will soon pay in comfort for the slight cost of material and the trouble of making them. The after end of the cabin, above the berths and back under the decks, is a space seldom used, and a locker about 30 inches long and 8 or 9 inches deep, extending from the berth-top to the deck beams, should be entirely out of the way. Such a locker will contain five jars, and still leave room at the end for a couple of bottles. Get some of the glass jars with the clamp tops, such as the ladies use to put up preserves; put a false bottom three or four inches from the bottom of the locker and in this false bottom cut a row of holes for the jars to fit in, and a couple of holes for ordinary bottles. (See diagram.) The jars make ideal receptacles for sugar, coffee, salt, pickles, cheese, matches, etc., their contents are kept dry, clean and fresh.

If the space between the berths and deck is not too cramped there will probably be room in this locker for a shelf above the jars, which is a handy place to stow charts, parallel rules and dividers, or pipes, tobacco, cigarettes, playing cards, and all the little odds and ends that accumulate upon a yacht.

Once he gets on the right track the average owner of a small yacht will usually continue to figure out improvements until his little ship is a marvel of compactness and convenience.

Exploring the Coast of Baffin Land in a Motor Boat

Trying to Locate a Harbor for a Hudson's Bay Company Post on the North Coast of Hudson's Strait in a 35-footer. Strong Arctic Tides and Excessive Compass Deviation Add to Difficulties of Navigation.

By J. T. ROWLAND

J. T. ROWLAND IN BAFFIN LAND DRESS

AFTER the Hudson Bay Company's steamer Pelican had left us at Cape Wolstenholme and sailed for the post on the west side of Hudson Bay, we talked over Captain Smith's suggestion that we cross back to Baffin Land and explore the coast for a suitable place on which to establish a new Hudson Bay Company's post. As we had to wait for the Pelican, anyhow, to carry us back to civilization, this move would expedite our return, as the Pelican would have to do the work later if we did not. So the Chief and I decided to "take it on" and become real explorers. Will Ford, who had come north on the Pelican to take charge of the new Baffin Land post, now joined our little ship, taking the place of his father-in-law, George; and Abe had by this time conceived too deep a devotion to the Chief to be pried loose with dynamite—of which I was glad because he was a very useful man on board, and always cheerful, with apparently unbounded confidence in the powers of the "crazy Yankees."

Cape Wolstenholme, as a glance at the chart will show, is the N.W. corner of Ungava, and Ungava is that part of the mainland of North America lying east of Hudson Bay. In other words, we were now at the point on the south shore of Hudson's Straits where that body of water joins Hudson's Bay. The land hereabouts is what a Newfoundlander would call "wonderful desolate." Dark cliffs a thousand feet high drop sheer to the water. There are a few gulches down which the snow squalls burst with a fury equalled only by the renowned "Williwas" of the Straits of Magellan; but real harbors there are none. Erik Cove, a few miles east of the Cape, is the deepest indentation in the coast for 50 miles.—and that is only a miniature bay a couple of miles deep with high land all around, and at its head a strip of sand where the two frame buildings of the Post serve only to accentuate the dreariness by suggesting the thought of people having to live in such a place.

Factor Parsons told us that he had never seen a time when one could not land on the beach through the surf; which was quite surprising in view of the fact that the cove is wide open to the north and the nearest land is Salisbury Island, out in the middle of the Straits, 50 miles away. He found an explanation in the tremendous flow of tide past the mouth of the cove, which in bad weather made up a "rip" that caused the sea to break there as on a bar, so that only the spent surges penetrated up into the cove. The rise and fall of tide is about 30 feet at Erik Cove, somewhat less than on the Baffin Land side of the Straits. I figured that by crossing the Straits diagonally on an east (N.E. *true*) course we would strike the Baffin Land coast in the vicinity of Chamberlain Id. (73° 45′ W. Long.), where we could decide from the look of the land whether it would be more profitable to skirt the shore east to Big Island or turn west and explore uncharted Gordon Bay for a suitable harbor. This diagonal crossing would mean a straight run of 140 miles, so I judged it best to leave Erik Cove early the following morning in order to reach land during the forenoon of the day after and if possible get our bearings on the other coast while the weather still remained fine. It had been so for over a week now, and one hesitates to ask much longer favors in this part of the world.

When we were about ready to get under way, the Chief came to me with a brilliant suggestion.

"That rotten dory holds us back 2 knots per," said he, "let's leave it here."

"But," I protested, "we must have some damn thing to go ashore in."

"There's a canoe up on the beach that just about answers your description," he retorted with a grin. "We can carry it on top of the cabin, and I believe the additional speed is worth the chance."

As I thought it over, I was inclined to agree with him, because we had quite a distance to go and not much more than enough fuel to do it with under ordinary load. "Right-O," I said, "the canoe for ours, but now God help us if we hang the old girl up anywhere over there, because we never could cross the Straits in that bunch of hoops with a rag over 'em."

At ten o'clock next morning Daryl dashed gaily out of Erik Cove, and headed E. (magnetic) past the end of Salisbury Island

WE DISCOVER THE WRECK OF A DUNDEE WHALER ON BAFFIN LAND

INTERIOR OF WRECKED WHALER SHOWING TANKS FOR THE OIL

ESQUIMO TENTS AT LAKE HARBOR, BAFFIN LAND

S. S. STELLA MARIS IN LAKE HARBOR

SHOOTING DUCKS—BAFFIN LAND

for the Baffin Land shore. The day was fine and the wind fair, so we gave her sail and power at an 8-knot clip to expedite as much as possible the lengthy run across the Straits. Only a few weeks before we had been disturbed at the thought of crossing Ungava Bay! Verily, familiarity doth breed contempt—of danger.

At sunset, the E. point of Salisbury Island bore W. and about 5 miles off. I was interested to see that a large bay with several islands in it made in on the E. coast of the island, because the maps (one hesitates to use the word chart) of the region give Salisbury Island a straight shore-line on the east. They also place Nottingham Island too far east. From the hills above Erik Cove one can see open water between Salisbury and Nottingham; but to go into a detailed statement of all the charted inaccuracies of these waters would require a volume by itself. I mention that error in regard to Nottingham only because it played a part in our return run from Baffin Land.

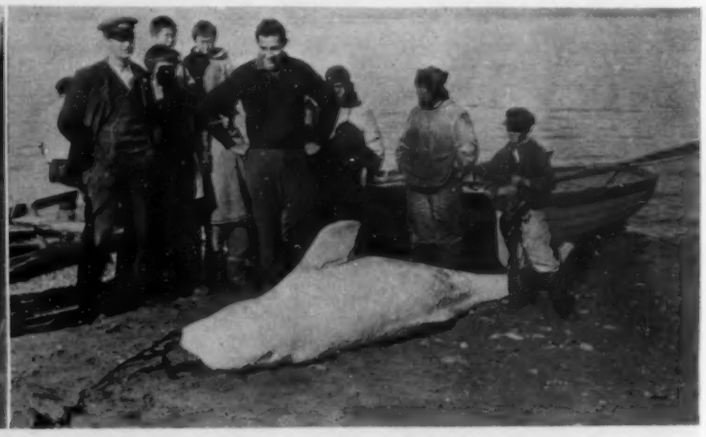
During the night, which was as calm as Long Island Sound in August, the man at the wheel would be surprised occasionally by the appearance of a great uncouth monster which would heave itself half out of water, sometimes close alongside, and stare at us with big wondering eyes. I had always thought of the walrus as being a sort of phlegmatic Dutchman, but the antics cut by some of those whom we disturbed that night were truly amazing, as executed by so bulky an animal. The Chief was, of course, keen to shoot a bull, and he and Will burned a lot of powder, but either their aim was poor, or the beasts dove and sank, for we failed to recover any.

"They're dangerous this time of year," said Will. "This is what is called 'jumping walrus,' but so long as we are going ahead fast they can't hurt us." He went on to explain that one of their favorite methods of attacking a small boat is to rise up under it and smash in the planking with their heads. What surprised me most, however, was to learn that they never attack a man once he is in the water, but will vent their spite on an overturned whaleboat by knocking it into kindling wood. Once the walrus form a circle about an attacking boat, there is sure to be trouble; so long as the hunters keep them broken up into small groups, they need have no fear.

We had averaged 7.5 knots since leaving Wolstenholme, and I promised Abe that the dawn would show us Baffin Land not far off. I was, therefore, considerably surprised at failing to see any hilltops rising above the low morning mist at sunrise. Soon, however, we began to notice strong tidal whirls, and presently a low rock island loomed out of the fog, then another and another, and presently Daryl was in the midst of a bewildering maze of low islands and reefs, around and over which the tide swirled and eddied viciously. I thanked my stars we had not come half a knot faster and landed up in such a messy place before daylight.

The haze soon burned off, and then we saw we had run in through a sort of channel and were in the midst of an archipelago of low islands extending as far as one could see in every direction except to the north where some low rolling hills appeared to be on the mainland of Baffin Land. Where the islands ended, and the land began, we could not possibly tell, so chaotic was the scheme of distribution. We threaded our way eastward on the lookout for signs of the natives most of the morning, as Will said they ought at this season to be on the outlying islands fishing. At length in running through a narrow

SOME LADIES OF THE LABRADOR



WHITE WHALE CAUGHT AT CAPE WOLSTENHOLME

tickle we found the way suddenly blocked by a reef extending diagonally across it, over which the water boiled.

The tide was strong with us and the passage too narrow to turn around in without backing, so there was no alternative but to go astern on the engine and give her both anchors on the run. Fortunately they held, the vessel swung around with the tide rushing past like a river. Just inshore of us was a fairly high island, so Will suggested that he and I go ashore and "have a spy." From the top of this hill we saw that the coast was still more ragged to the E., the island extending offshore nearly to the horizon. "You never could put a post on a coast like this," said I. "The Pelican would not dare come within ten miles of it. Incidentally I don't much relish working through it."

"THE POINT OF SALISBURY ISLAND BORE W. ABOUT 5 MILES OFF"

"No," answered Will, who had the grim humor of a frontiersman, "that canoe would not look just right going back across the Straits." So we concluded to turn west and try Gordon Bay for a decent ship's harbor. On returning to where we had left the canoe, we found it perched up on a ledge five feet above the water, so quickly was the tide falling; and the reef that I had nearly hung the Daryl up on was now the dam for a pretty little waterfall. As soon as the flood tide began in the afternoon, we started out and began to pick our way westward across a large bay. It was very odd at low tide to see small icebergs perched up high and dry 20 feet or more above the water level. Toward evening a rather inviting little harbor between two rocky points opened out on the landward side, so we felt our way in gingerly and anchored.

It was a clear beautiful afternoon with a perfect chance for observation, but for one very important item, namely, that the islands made it impossible to get a sea horizon. So I got a plate from Abe and some cylinder oil from the Chief and attempted a sight with artificial horizon, which when worked out put us in about 75° W. Long. Now this puzzled me greatly, because I felt sure from the course steered during the night that we must have come upon the coast at least 30 miles farther east, in the vicinity of Chamberlain Island, and it did not seem possible that we could have run this far west in the afternoon, winding around among the islands as we had.

Accordingly I blamed it on the cylinder oil and threw the sight out; but it came back to me quite forcibly a couple of days later as will appear. While we were lying in this "Walrus Harbor" as we called the place, from the fact of having to shoo an old bull out before attempting to go ashore in the "kernoo" (Abe's version), Bob made the pleasing discovery that the oil in one of our three tanks had water in it. "But we have one good tank, and about half the one we came over on left to take us back, to say nothing of five gallons in a can here for cooking, so let her go; howsomever, it's just as well we didn't go beating it farther east," he said.

"You're Yankees, all right!" said Will; but I did not remark that he appeared particularly panic-stricken himself.

THE PELICAN SAYS GOOD-BYE TO US

(Log.) August 25th. Get under way early and leave Walrus Harbor. Run W. across another wide bay that has chain of islands extending out in crescent form from its western point, almost shutting it off from the sea. Come upon wreck of old whaler in little cove on W. side of bay. Go aboard and take photographs, but can find no identifying mark of any sort. (The captain of a whaling vessel which came into Erik Cove when we were there, later, said this probably was the Pole Star, of Dundee, lost about 13 years ago.) Breezes up from E. and looks nasty. We try to pass through the chain of islands just mentioned, but find it too risky, so have to go 5 miles out around them; then away W. again. Land looks higher farther west, and fewer islands, thank God! Run till about 4 P.M. along "Gordon" Bay and make harbor for night in small inlet, absolutely landlocked. No trouble to find shelter on this coast, anyhow. After anchoring, Will and I go ashore and find land continuous for some distance to west. This looks more like real country instead of a bunch of tidewater islands. Rains and blows. Walrus and white whale come up into harbor, the latter an animal about the size of a porpoise, but white and shiny. Have good feed and turn in."

In casting up the runs that night for the past couple of days I found it impossible, owing to the way in which we had wound in and out, to do more than form a rough guess at the amount of westing made, and this, as it turned out, I greatly underestimated, so that though we were really within 15 miles of Cape Dorset on the west side of Gordon Bay (which, by the way, is no bay at all, but simply a slight concavity in the coast line) I had an idea that we must be nearing Chorkbak Inlet, 50 miles (I shame to say it) farther east—an error which could never have occurred on a reasonably straight coast where one could run courses.

We spent some time next morning charting the harbor, as it was by far the best for a large ship so far discovered, and Will liked the lay of the land. Of natives, however, there was no sign, and these are as necessary for a trading post as is the site.

(Log.) "August 26th. Run down out of harbor in A.M. and head W. for long point. Think Chorkbak Inlet must lie on far side of it. Find it necessary to go several miles offshore to avoid reefs, then draw in on land in P.M. and open out deep inlet which appears to wind far into interior, with high land on western side of it running out into long promontory. Run up inlet 10 miles from point, then turn E. into side canyon, an ancient glacial trough about 3 miles long with the typical cirque or amphitheatre at its head. Land fairly high (say 500 feet); fierce squalls sweep down through canyon, but Daryl climbs up through them. Anchor close under shore at 4:30. Go ashore and see signs of caribou and foxes, but no 'huskies.' George shoots seal, and the Chief eats some; but no old dead pig for mine! Wish it would clear up so I could get a decent sight and see if this is Chorkbak Inlet. Damn fine harbor, anyhow."

That night the Chief reported that the fuel was getting rather low, so after due consideration it seemed best to cross back home to Erik Cove. At any rate, we had found two good harbors and had eliminated as impracticable a considerable stretch of coast to the eastward; so if we could once definitely locate the position of this last stopping place the rest could all be worked out—stern foremost. However, the morning dawned overcast and nasty with the wind fresh N.W. so that all chance of getting observations was lost. In this fix, I hit upon what seemed a brilliant idea. Not knowing with certainty where we were, I could not lay a course for Erik Cove, anyhow; so I decided to steer S. (true) across to the Ungava shore, which is straight and easy to follow, and then run W. along that until we came to Cape Wolstenholme. Then, knowing the courses and distances sailed, it would be simple to reckon backwards and see from what point in Baffin Land we had left; and thence to reconstruct the last two days' exploration of the Baffin Land coast, including the location of the only two good ship's harbors which we had discovered. Accordingly on—

(Log.) "August 27th, we get under way at 4:30 A.M. Wind N.W. fresh, clouds ragged and greasy looking. Run down along point and stand S. (true) for what appears to be a group of islands quite a distance offshore. We take them to be the White Fox Islands (thinking we have just left Chorkbak Inlet), but on getting nearer see it is all one island. Compass four points off on S. heading, due probably to local attraction of iron masses in coast. Correct for same by Azimuth bearing of sun when it shows through clouds for a minute; rather confusing, however. Going 8 knots, sail and power, but do not get up to the land which I took for White Fox Islands until 2 P.M., when on seeing it from the eastward we recognize Salisbury Island, and it suddenly dawns upon me that the point we have just left behind was Cape Dorset, the extreme S.W. corner of Baffin Land, much farther W. than I had any idea of. Lucky I decided to hit straight across instead of putting her on the course from Chorkbak Inlet to Cape Wolstenholme, as that would have carried us out into the middle of Hudson Bay."

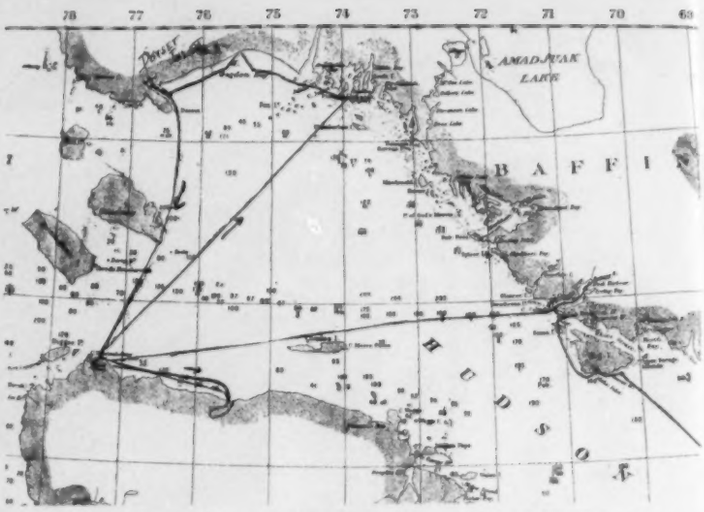
The erroneous position given to Nottingham Island on the chart (already mentioned) led us somewhat too far west after rounding the S. E. cape of Salisbury, as our compass still was on a strike and the Ungava land not yet visible; but, the wind continuing fresh and fair, we raised the latter during the afternoon, and were close in by midnight, when a curious haze so distorted the apparent height of the cliffs that we could not recognize any of the landmarks, even Abe's keen vision failing. When a few miles offshore, we hove to till daylight, finally getting up to the anchorage in Erik Cove about 8 o'clock.

The remainder of the three weeks which elapsed before the Pelican's return was notable for only one more expedition, but as this gave us the most exciting run of the whole summer it is worthy of mention.

Some of the Eskimo who were living at Wolstenholme had left their winter stuff such as Komatiks (sleds), clothing, supplies, etc., at a place they called Sugluk Bay, 50 miles farther E. along the Ungava shore, and they besought Parsons to take the devil boat and go down after it for them. What the lazy beggars would have done if we had not come there I do not know. Starved, most likely. At any rate, we took up the white man's burden and with two dirty and benighted heathens on board we started off one lowering morning for Sugluk Bay.

The run up was made entertaining by an accident which happened to the steering gear. It was rather a "bum" arrangement anyhow, with too many leads and pulleys to suit me, and a little bronze quadrant clamped onto the top of the rudder post.

This quadrant happened to be a rotten casting and it broke clear across and dropped off. The rudder post was itself only a slim bronze rod and there was no possible way to get a grip upon it except with just one thing—a Stillson wrench.



WEST END OF HUDSON STRAIT AND ROUTE OF DARYL TO BAFFIN LAND

Fortunately the Chief had brought one, his "long handled toothbrush," he affectionately called it, and with this we steered Daryl for most of the afternoon, anchoring in Sugluk Bay just at sunset.

The "huskies" were scared to death most of the time so once at anchor we had no trouble getting rid of them, and saw them no more until the following morning, when they came paddling back to get Parsons' help in handling their gear. He finally had to go along to hurry them up; in the end it was nearly noon before we were clear of the bay, our cabintop littered with a rare assortment of Eskimo property and the cockpit filled up to the coaming.

Presently we began to encounter fierce snow squalls sweeping down off the high land, which would pick the water up and make it drift like loose snow in winter across an open field. I lugged a close reefed mainsail as long as I dared, but at length even that was too much. The tide was against the wind, and off some of the points the lop made me think of the rapids in Niagara gorge.

(Log.) "Get sail off her; 'huskies' scared to death. Atikleina weeps at thought of wife and children. At sunset Chief makes observation on beautiful moonlit night, then glances ahead and sees what is coming down off the land. 'Cheese it,' quoth he, 'if I saw a cloud like that in Long Island Sound, I'd leave the ship and swim ashore.' Proves to be a snow squall *with* wind. Can't see a thing; compass 8 points off and swings the wrong way. Get turned half way round and almost bump the beach. Damn such a coast!"

The squalls continued at short intervals for two or three hours. We slammed through terrific tide-rip off Erik Cove, and finally make the harbor about midnight. "I'll have to hand it to the old Mietz & Weiss after all—any motor that will keep running through that lop sure has my admiration," says the Chief.

Oddly enough we did not lose any of the deckload; and incidentally I know of two "huskies" who will never ask to go anywhere in a motor boat again.

It was a week later before the Pelican showed up. We went aboard her and returned to civilization; all but George Ford. He remained to take charge of the Erik Cove post for a year. He is there now, poor devil! I think of him often, when the wind howls these winter nights, and wonder what it is like up there facing the frozen Straits, fighting the cruel cold with no company but the "huskies" and the still wilder beasts they trap. Belike, I shall know for myself—some day!

How to Build a 12-Foot Power Tender

By H. W. PATTERSON

PART II

WE left off last month after making the moulds and describing the method of setting up, preparatory to planking. But before proceeding with this part of the work I will give the dimensions of and instructions for getting out the keel, stem, transom, etc.

KEEL, STEM AND TRANSOM

For the keel select a sound oak plank and have it dressed both sides to 1½". Join one edge perfectly straight, lay the template on it with the bottom to the jointed edge, mark and saw out, then plane the top fair and perfectly square across. Bevel the upper corners for the rabbet, taking the angle at each section from the body plan. With a gouge and round plane work out half the shaft hole, making it about ⅛" larger in diameter than the shaft to be used.

Get out the horn timber in the same manner, with the grain running parallel to the rabbet, and secure it to the keel as shown in Fig. 5 (Part I). The brass plates should be 1-16 x 2¼" and have the edges let in flush. Bed them in thick white lead and fasten with ⅝" No. 6 brass screws spaced about 1½" and staggered slightly, seeing that the after ones will not interfere with the stuffing box bolts. The forward ends of the plates should finish flush with the top of keel and be bent in tight against the rabbet. To make a cheaper and simpler job but not so neat, use pieces of oak ½" thick instead of the brass.

Next, make the stem, which is of two pieces of oak steamed and bent. The finished width of the forward piece at the rabbet line is 1½" throughout and the thickness fore and aft as determined by the lines on the floor. The inside piece is 1¾" wide and 1¼" thick full length. Select good straight-grained stock and if it is a little green so much the better. Get them out about ¼" wider and a foot or more longer than required to allow something for finish and fitting, and bend them together around a form nailed to the floor. The form must have a much quicker turn than required for the inside of stem, as the oak will straighten out considerably when released. A radius of 10" will be about right. If the stem is bent too much it is an easy matter to open out the curve when fitting. Steam or boil them about half an hour and bend quickly while hot, forcing them in place with cleats and wedges on the outside. Let them set for a day or two, then fit to the line by straightening a little here and there as may be necessary and plane to the finished widths.

Fit the scarf where the outside piece joins the keel and then fasten the two pieces together with 1½" No. 14 brass screws put in from the inside and spaced 4½". Now cut the rabbet to about 1-16" of the finished depth, leaving this amount to be trimmed out after the form is set up; also beard or trim the outside piece from the rabbet line to a width of ⅜" on the forward side, which width should extend from the head to a little below No. 1 WL., when it generally widens to the width of the keel.

By drawing sections similar to Fig. 3 (Part I) at each water line in the half breadth plan, the angle of rabbet and shape of stem can be obtained. You will note that the rabbet is cut so that the plank is square on the end and the back rabbet or inside corner of the plank is at the joint between the two pieces forming the stem. The shape of rabbet can be accurately obtained from the body plan on No. 2 section, but between this and No. 1 WL. care should be taken not to cut too deep.

Lay the keel and stem in position on the lines, and if the scarf fits and everything is right fasten together with three ¼" copper rivets, making a stopwater at the joint. This is necessary to prevent water following along the joint and is simply a ¼" plug of soft wood driven through the keel at the joint and cut off flush with the rabbet. Do not fit it too tight as it might open up the joint when it swells. Cut off the after end of stem 2½" aft of section No. 2 but leave any extra length above the sheer until later. While the keel is on the plan, mark the position of the sections on its side.

Next, make the keel batten of oak, ½ x 2¾"; bevel the edges, taking the angles from the body plan and fasten on top of keel with 1½" No. 12 brass screws spaced 8", making them come between frames. Mark square across the top the positions of sections and frames. Each section line is also a frame station, with two other frames between.

Make the transom of 1" mahogany or oak, in one piece if possible. Should it be necessary to use two pieces make a neat, tight joint and fasten together with four 3-18" oak dowels and glue. Mark a center line on both sides and line out the after side from the template. To allow for the bevel saw it out larger than the line, obtaining the amount necessary from the water lines and buttocks which were drawn in for this purpose. Bevel the edges, working neatly to the line on the after side but be sure to leave ample wood on the forward side, which can be trimmed off to suit the run of the plank after it is set up. The top edge is square and may be finished at this stage. The planking will lap by and fasten to the outside of the transom but a projection of the transom should be made at the upper edge of sheer strake so that it finishes fair with the outside of plank. It is this attention to details of finish that makes a shipshape job.

The stern knee is of hackmatack 1¾" thick. Be very particular to plane the surfaces which fit against the keel batten and transom perfectly square. Chamfer the outside corners about ¼" and smooth up.

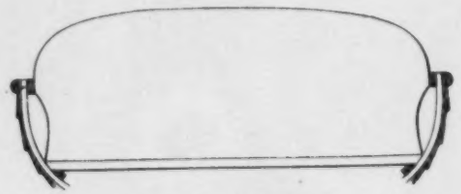
Cut off the after end of keel batten, also the lower corner of transom, so that it fits on top of horn timber and against the after end of the keel batten and secure in place with the knee. Be sure that the knee is exactly in the center of the transom and that the latter is square across the boat, then fasten through the transom and horn timber into the keel with 2" No. 12 brass screws.

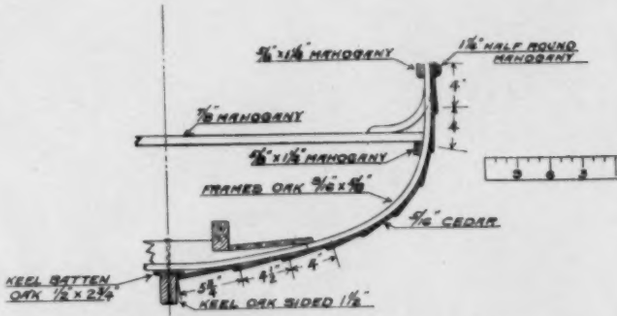
PLANKING

The style of planking to be used is that known as "lap strake" or "clinker," in which the seams are formed by lapping the planks and riveting together instead of fitting them edge to edge and caulking as in "carvel" or smooth planking. This permits the use of thinner material than is possible where caulking is necessary, which saves weight, at the same time making a strong boat, as the skin is practically one piece and consequently much stiffer than smooth planking. It is also less liable to leak through shrinkage.

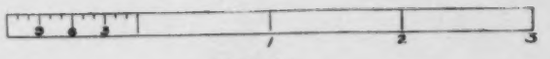
As explained last month the plank should be clear white cedar planed at the mill to 5-16" full so that it can be smoothed by hand to a finished thickness of 5-16". There will be nine strakes on each side, varying in width; those on the bottom being the widest and those around the turn of the bilge the narrowest.

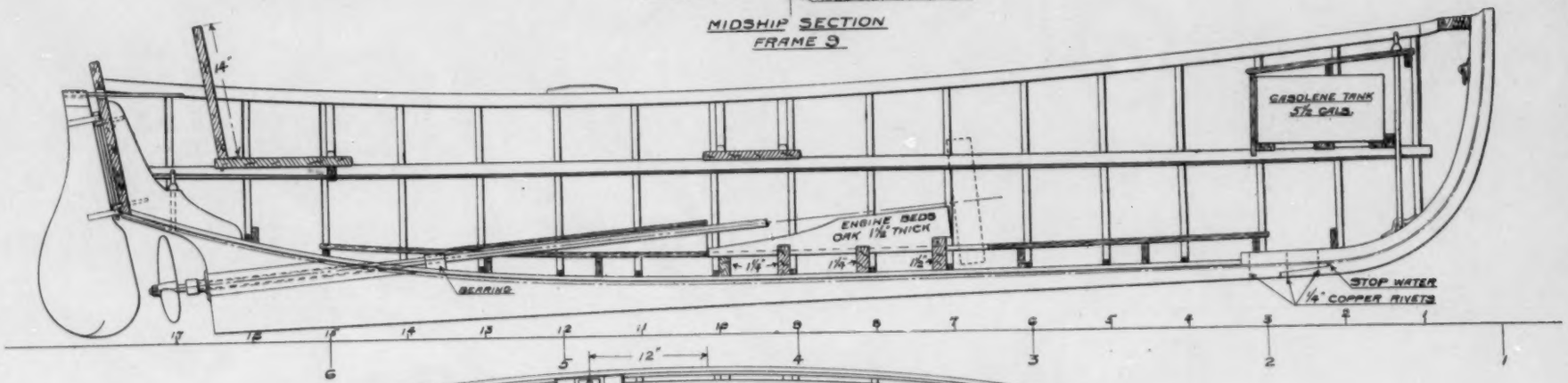
Put the garboard on first. The full width, including lap, on mould No. 4 should be about 5¾", at the transom 3½" and on mould No. 2 4¼". Set out these widths from the rabbet, run a batten in a fair curve through them and mark each mould and the stem. The shape of this plank will be rather peculiar and to obtain it the best way is with a "spiling" batten. This is a strip of soft wood about 3-16" x 4" and a little longer than the boat.

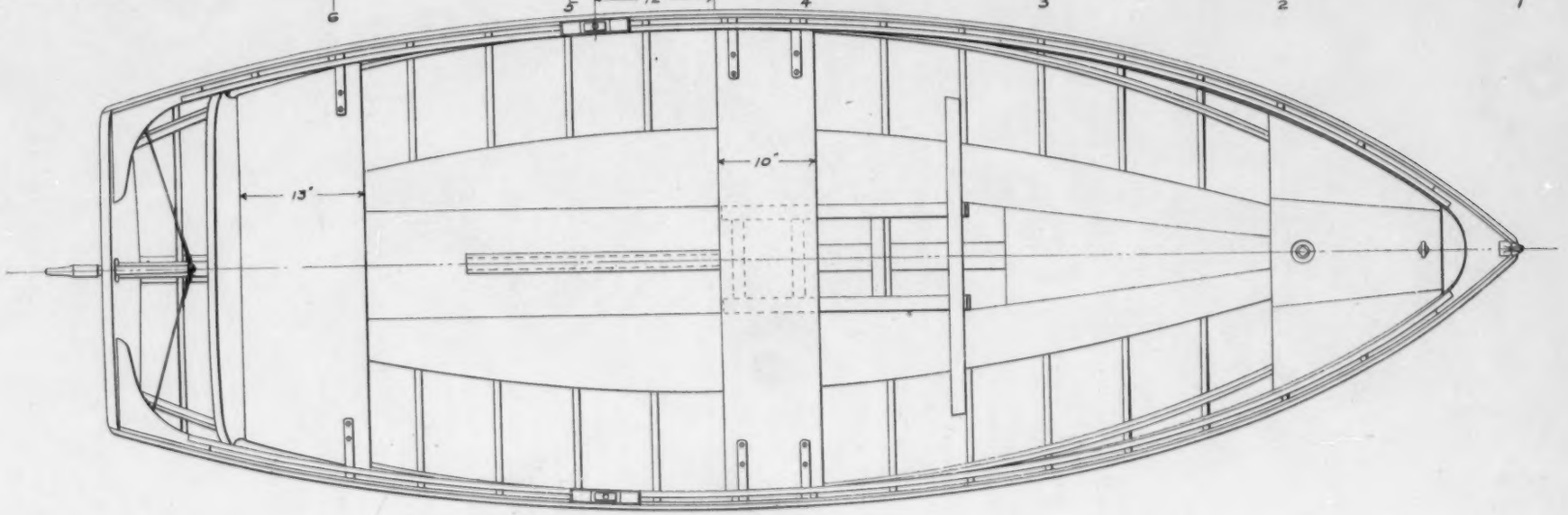




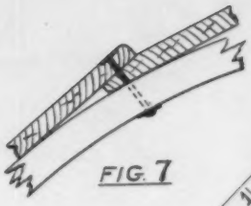
MIDSHIP SECTION
FRAME 9

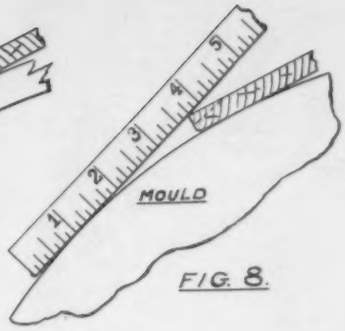


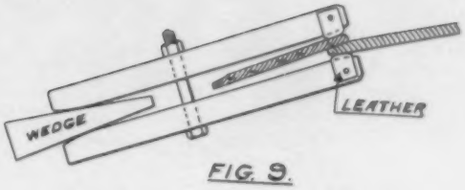


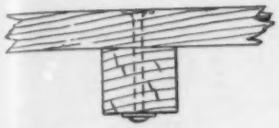


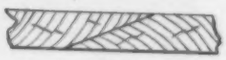
CONSTRUCTION PLANS AND DETAILS OF 12-FOOT POWER TENDER











DETAILS OF CONSTRUCTION OF 12-FOOT POWER TENDER

It need not be straight, in fact a curve edgewise will be an advantage, but it should be planed. Cut this roughly to fit the rabbet in the stem and tack it to the moulds close to the keel, starting amidships and working to the ends. It is important that it lies flat against the moulds, transom and stem rabbet, otherwise allow it to take what shape it will. The idea is to have this batten occupy the same place the garboard will, and for the best results the edge should not be more than 1¼" from the rabbet at any place and the closer the better. Trim the batten if necessary to get these conditions.

Now take a pair of compasses and set the legs to an opening a little greater than the widest gap between the rabbet and edge of the spiling batten. At each mould, and at least one place between, place one leg of the compasses against the rabbet, and square out from it; prick a small hole in the batten with the other leg. Put a small chalk mark circle around it for identification. Do not use a pencil for this as the batten will be used for all the planks and there would soon be confusion. Chalk is easily rubbed out. Around the forefoot where the curve is quick make these marks closer together and always square to the rabbet. Mark across the batten with chalk at the after side of transom and at each mould.

Next tack the spiling batten on a suitable plank and using the compasses with the same opening as before, reverse the operation by setting off from the holes in the batten and prick similar ones in the plank. Around the forefoot, instead of pricking a hole which might not be square to the rabbet, sweep a small arc of a circle. Run a batten to these marks and line it out. It is obvious that this line will represent the proper shape for the lower edge of the plank, regardless of how it appears when lying flat.

You will notice on the edge of each cedar plank a strip of light colored wood. This is the sap, and if the width of the plank will permit place the spiling batten so that all the marks will come on the heart wood, which is more durable. Next, set off the widths as previously marked on the moulds and line out the upper edge, then saw it out and plane the lower edge so that it fits tight in the rabbet the whole length. Lay this plank on another board and line out one for the other side of the boat.

Referring to Figs. 6 and 7 it will be seen that the upper edge of each plank is beveled so that the next one fits tight against it. The amount of this bevel depends on the form. Fig. 6 shows the condition where the mould is almost straight, as on the bottom, and the bevel is slight, while Fig. 7 shows it around the bilge where the greatest bevel will be. By clamping a plank in place and holding a stick or rule across the corner, as in Fig. 8, the amount to be taken off can be seen. The lap is ¾", and a light pencil line should be gauged on for the edge of the bevel. At each mould cut the bevel a short distance with chisel or draw knife, then put the plank on the bench and finish it the full length, using these short sections as guides. Where the planks fit in the rabbet and at the transom the bevel must be so cut that the planks are flush. Start about 12" from the end and gradually change the plane bevel into a beveled rabbet; also bevel the lower edge of the next strake so that at the end the joint will appear as in Fig. 10. This is necessary to obviate a shim edge on the outside, which would be the case if the bevel was not rabbeted, as shown in Fig. 11.

After the garboard is beveled and planed smooth, place the forward end in the steam box for ten to twenty minutes, then quickly clamp it in place, securing the forward end first. If it fits perfectly it may be fastened at once; if not, allow it to set, then remove it to do the fitting, but do it quickly so the plank will not have a chance to straighten out again. In the stem and transom 1" No. 6 brass screws should be used. Space them about 1½" along the forefoot and put three in the transom, one of which should go through the lap after the next plank is on. The fastenings to the keel batten are 1¼" cut copper nails riveted over burrs on the inside and there should be three, equally spaced, between frames. Omit the center fastening where a floor is located between frames as this fastening will be a screw through the plank and batten into the floor. When the frames are fitted another fastening will go through plank, batten and frame. This garboard strake is the hardest part of the whole boat, and if you make a good job of it you need have no further fears.

After both sides are fastened, lay off from the upper edge of the garboard the upper edge of the next strake, which distances are about as follows: 3¼" on mould No. 2, 4½" on No. 4 and 3" on the transom. Run a fair batten so that the other moulds can be marked. Take a spiling for this plank the same as for the garboard, placing the compasses to the pencil line representing the lap, and setting off the widths from this line also. After the plank is planed and fitted round off the lower outside corner and the upper inside corner as shown. Steam, if necessary, and fasten with screws in the stem and transom and with three copper nails between frames. For these fastenings use 1" cut nails and be particular to have them exactly in the middle of the lap and spaced equally fore and aft. Bore for these nails with a bit just large enough to prevent splitting, and be careful when driving them not to bruise the wood. The heads will finish flush and it is a good plan not to set the heads flush until time to rivet, which is after all the planking is done.

The upper edge of the third strake, from the upper edge of the second, is 3" on mould No. 2, 4" on No. 4 and 2½" on the transom. After this strake is on lay off the remaining strakes as follows: Measure down from the sheer mark on the stem 3¼" for the top or sheer strake, and from this mark 3"; on mould No. 4, 4" and 4"; on the transom, 3" and 2¾". Run a batten as before, then divide the remaining space on the stem, transom and each mould into four equal spaces. These marks represent the upper edges of the strakes. The widths given for these planks are not taken from actual work and may need modifying somewhat to make the best job. The amateur must use his judgment, guided if possible by inspection of some other boat. After a batten is run, look at it from all positions and see that it makes a nice fair line and when viewed end on shows no reverse curve.

Also see that the change in width from the wide ones on the bottom and top to the narrow ones in the bilge is gradual.

If strength is more important than lightness, the sheer strake may be made 1-16" thicker than the others or of oak or mahogany.

If the form is perfectly fair and the planks exactly fitted they will lay snug against the moulds, but if they do not, hold them in place with slim wire nails driven through a small block or thick piece of leather. These holes are plugged afterwards with cedar. A handy clamp for holding the laps together is shown in Fig. 9. These are easily made and you should have several on hand. Before fastening any planks to the stem or transom lay a strand of candle wick so that it will be under the plank ends, and as each strake is fastened bed it in thick varnish or in white lead, colored to match the cedar. A generous coating on the laps, at the ends, helps hold the joint.

When all the planks are on remove the fastenings holding the form to the floor and carefully turn the whole business right side up on two or three horses, securing it with shores to the upper ends of the moulds. All the nails should now be set flush with the outside and riveted over burrs. You will need an assistant for this job and it should be done carefully. The iron which your helper holds on the nail heads should have rather a large face, almost flat, so that the wood is not bruised. Use a light, round pene hammer and be careful that the nails are headed and not bent, which tends to force the burr sideways into the wood. The burrs must fit tight in order to make the nails draw, and may be set down with a regular set or a short piece of tubing. No. 14 burrs will be about right. This riveting looks easy but requires skill to do properly, so if you have had no experience I would advise practicing a little outside the boat. The next job is framing, but before starting it go over the inside of planks with sand paper to get them smooth and clean.

FRAMING

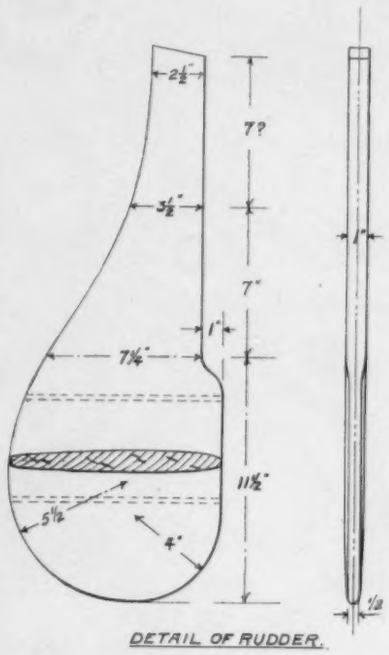
The frame stations have already been marked on the keel batten and should now be laid off on the upper edge of the sheer strake and one intermediate point in the bilge. Measure in a line straight fore and aft and not on the run of the plank. Bend a thin but fairly wide batten to these marks, keeping it square across, and make a light mark at the upper edge of each strake as a guide for bending and fastening the frames. The forward side of each frame will be to the mark, as shown on the construction plan. In the center of each lap and 5-16" from the mark, which will be the center of the frame, bore a hole for the nail. Also bore one through the keel batten.

The frames are 9-16" x 5/8" oak or elm steamed, and bent in the boat with the wide side to the plank. Select good straight grained stock not too dry and if possible saw them out in such a manner that the nails will cross the grain or annual layers, which reduces the tendency to split. (See Fig. 12.) With the exception of a few forward they will be in one piece from gunwale to gunwale and should be gotten out 6" to 10" longer than this calls for, and planed smooth before steaming.

Each will be fastened to the keel with one 2" galvanized wire nail and at the laps with copper wire nails riveted over burrs on the inside, as the intermediate plank fastenings. Where a floor comes next to a frame put the second lap fastening through this instead of the frame. These nails should be made of No. 12 wire and you may have to buy them longer than required in order to get this size. It will be necessary to bore the frame for them and the hole should be small enough to hold the nails well, yet large enough to prevent splitting. Ordinary twist drills give a good choice for size and when used with a small hand drill fast work can be done. Have this outfit handy, also the nails, hammer, holding-on iron and a couple of clamp screws. In addition have a shore or brace that can be put against something overhead and on top of the frame, when bent in, to hold it down tight on the keel.

Steam the frames 20 minutes or more. Take one from the box and grasping it by both ends bend it and push it down to the keel, holding it there with the shore, then with the hands bend and twist it so that it lies snug against the planking and secure it to the top edge of the sheer strake with a clamp screw. See that it is exactly to the marks, then start from the bottom and put in the fastenings at the laps. Do not fasten the top edge of sheer strake at this time. When the lap fastenings are in, remove the shore and drive a nail in the keel.

An assistant is required for this work and the whole operation should be performed quickly as the small frames cool rapidly and are then quite stubborn. With a man on each side they should go in easily. When bending them do not simply push them into the bilge but, holding one hand where the greatest bend is required, with the other force the head of the frame inboard making the bend much quicker; then bring it outboard and note the result. By working in this way from the keel up the frame can be made to fit as tight in the bilge as elsewhere. After the upper end is clamped, if there should be any places where it does not touch, a tap with a hammer on the end will help. Start amidships and work aft as these are the easiest to fit and the practice will help with the more difficult ones forward. Near the ends, especially forward, there is considerable bevel to the frames and this must be twisted in as they are bent so that they lie flat against the planking. Frames 1, 2 and 3 are in two pieces and are fitted to the side of stem to which they are fastened with a screw put through from the outside of plank. When all the intermediate frames are in and fastened, fit four or more cross spalls, securing them to the frames just below the clamp; then take out the moulds. Carefully plug all the holes where temporary nails were driven and fit the remaining frames.



DETAIL OF RUDDER.

CLAMP, KNEES, ETC.

Make the breast hook of oak or mahogany in two pieces with a joint at the center line and the grain running parallel to the side of boat. It extends 10" aft of the stem and should be fitted around the stem and out to the planking, with a 3" scarf on the after end to take the clamp. The finished thickness is 1¼", and as the clamp will be placed square to the side of boat this breast hook should have some crown to carry out the finish. After the pieces are fitted fasten them together with a couple of ¼" copper riveted bolts and fasten in the boat with two 1¼" No. 10 brass screws on each side, keeping them forward of the scarf.

Next put in the quarter knees as shown, fastening them in the same manner to the plank and transom. They should be square across the transom and have a scarf on the forward end similar to the breast hook. These knees are best made of hackmatack crooks if the clamp is oak, or of red cedar if the clamp is mahogany.

The clamp, or gunwale, is 5/8" x 1¼" of either mahogany or oak with the inner corners slightly rounded. It is fastened at every frame with copper wire nails, and also at every other frame with brass screws. In the scarf at each end should be two through fastenings. Fit the clamp in place, keeping it square

(Continued on page 358)

Fortunes of Fitting Out

How the Spirit of the Spring Gets into the Blood and Sends Men to the Waterfront. The First Bet of the Season Won by a Schoonerman

By C. H. J. SNIDER

WATCHING THE "FIRST-OUT"

IT is gay and laughing April, late April. The river hurries, swift and brown, to the wide belt of tawny rollers that marks its trysting place with the crystal blue of the lake. Far off, the towers and spires and chimneys of the throbbing city show under the overhanging pall of grim smoke like faint buoy marks in a chart of dangerous shoals. But out here in the little port, all is bright sunshine and the air breathes the eternal hope of world-old, never-aging Spring.

Side by side on the sandy beach by the creek-mouth bask the slim-hulled yachts and blocky, square-nosed stonehookers, their spars and rigging slanted fore and aft, to port and starboard, lacing the clean-washed sky with a riot of zig-zagging. Most of the yachts have been stripped, even of their masts, before hauling out. Most of the coasters and the sharp-ended, sturdy fishing smacks, with clinker-built sides rough as the clapboarding of a frame-house, have their masts standing, and some even have the throat and peak halyards rove off, using their gaffs as derrick arms to lift aboard plank and spikes and oakum for the Spring overhauling. Around the hulls of yachts, hookers and fishermen swarms a busy throng armed with scrapers, making-iron and seam-brush; and the tap-clink of the apple-tree caulking mallet is heard in noisy chorus.

Out in the creek-mouth swim, at single anchor or moored to long spiles driven into the marshy bank, a couple of hookers and a few newly-launched yachts, among them a big cruising yawl, the latter the earliest of the early birds. Her owner believes in getting into the water as soon as the ice leaves the slips, and Hans and Jan and August have been busy as nailers this month back, burning off the old paint, scraping, sandpapering, holystoning, varnishing, gilding and enameling that sleek, glorious creature, with a satiny body like a racehorse. Out here, far from the city's smoke, white paint dries white, and gold-leaf goes on like molten sunlight.

She swings there daintily above her image shimmering in the swift brown water, her standing gear cutting the sky in straight lines of black, in contrast to the wind-warped curves of yellow and brown halyards and the ruled white diagonals of her topping lifts, newly served and whitened for the protection of her sails. Her catheaded anchor flashes back the sun from its coating of aluminum; answering rays of deepest orange wink from the smooth surfaces of newly-varnished gaff and boom and mast and spreader. Her snowy sides illumine the brown flood that rushes gaily lakeward beneath the deep maroon band that marks her waterline. Here and there about the deck the brass of cleat and wheel and binnacle and skylight give back the sun's caress in living flame. She is the proudest of man's creations.

Not far from her the Mary E. Ferguson, clipper of the stonehooker fleet, has also fitted out. It is her thirty-fourth season, and despite a fresh coat of sparingly applied paint she looks it. Her skipper views with pride the brand new mainsail, the clew of which stretches as far aft of the taffrail as the tack is forward—pride which is allied with regret, as he turns to rueful contemplation of the mildewed, blackened foresail, patched like a crazy quilt through the long winter evenings. It is strong enough, he finally decides, to "do," though threatening to leave the boltropes ere the swallows fly South. As he knots the last footstop he thinks enviously of what it must be like to have a yacht with new sails every year!

Back of the fleet, nesting on the bank, is a long one-story shed where a score of young fellows, in sweaters and overalls that look strange on them, are busily sorting out coils of rope, bundles of sails, paint cans and tool boxes. One is racking his brains to remember whether the long coil with the running splice three fathoms from the end is the mainsheet or the peak halyards; and another would exchange such remnants of his soul as he has retained to recall *where* he put "that putty knife."

Behind the gear shed is a little cove or slip, where a pair of weatherbeaten masts, with funny, old-fashioned futtock shrouds for the topmast rigging, slant at an angle suggesting that the vessel they belong to is carrying a press of canvas in a typhoon. Go around and take a look. See the chubby-cheeked hull, with one bilge high in the air, blinding bright with fresh red paint; and the other side, buried so deep in the water that only the bleary goggle-eye of the lee hawse-pipe shows. She is "on her last legs," is the old Speedwell. The multitude of tin patches over her butts, and four-foot pieces and weird scarfing in her planking show that. Indeed it looks questionable if she will even so much as get on her feet again. Old Abijah was too poor to do anything but leave her in the ice all winter. Buoyed with the hope of Spring, he has careened her so as to get at the leak in the starboard bilge that troubled him all last year.

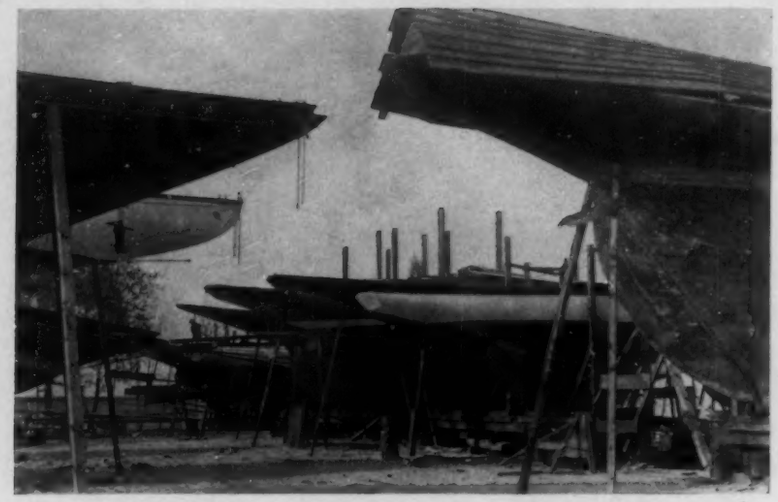
But now that that is stopped he is worse off than ever. The water has seeped in through her old topsides until her sun-dried coveringboard and rotten stanchions are immersed. The old man has hove with might and main at his ancient wooden windlass to straighten her up by means of a tackle led from her masthead to a tree trunk across the bank. Failing in this, he has tried to warp her off the mud bank and float her over to a level sandspit, where, on an even keel, her greedy decks no longer drinking the wave, he can pump her dry; but the old windlass-barrel has split like a rotten log, and his helpers, weary of well-doing at nothing-a-day, have forsaken him. The old man, his face seamed with sixty summer's suns and winter's winds, toils on, a grim Danaid, standing in leaky sea boots at the low side of an asthmatic Brokenshire pump, which shoots spasmodically into a wooden trough an intermittent stream of frothy water, brown as the river whence it comes and whither it goes.

"Ef I c'd only git her to raise a little," he gasps. "Er ef only they was a tug here to gimme a yank off the mud! Her topsides is tight enough to float her if she was only on an even keel!"

"Good thing fur ye, 'Bije, if she does slip down and out," says a tobacco-chewing shellback, complacently watching him. "Ye've pumped the lake through her 'fore now, an' ye'll do it again if ye git her afloat this season."

"You betche," chorus the two or three lingerers on the scene of Abijah's travail.

"Ef I only get her fitted out they's five loads of fertilizer I'm promised to haul to Marlatt's farm from the city, and they's cribstone to take back," gasps 'Bije in return. "Oh, if they was only a tug to give her a yank off afore she keels clean over onto her beam ends!"



"SIDE BY SIDE ON THE SANDY BEACH BASK THE SLIM HULLED YACHTS"

The honk-honk of a touring car booms along the April breeze. A tender pulls around the stem of the yacht in mid-stream and reaches shore as a little procession of young fellows, lugging suit-cases, winds around the tiny cove, while the throbbing drone of a standing motor mingles with the clank-splash of Abijah's pump, and the old man's despairing repetition, "Ef I only had a tug to gimme a yank off!"

They pause to joke for a moment at the red-bottomed old wagon, and pass on—for youth must be served.

Scarcely has the renewed plashing of the tender's oars died away when the small blue square of bunting that has been aflutter from the starboard spreader of the yawl, denoting the owner's absence, settles down, and his flag soars to the mizzen truck.

"IN THE CREEK MOUTH SWIM ALREADY A FEW NEWLY LAUNCHED YACHTS"

"Ahoy, the Ferguson!" the owner hails across the dancing brown water. "Do you want a race to town?"

"Sure!" comes the ready response from a lanky chap in top boots aboard the schooner. "No using yer auxil-ry, mind, an' light sails except tops'ls barred. I ain't got no silk spinnaker nor balloon jib an' such, but I'll race ye to town under plain sail, and I'll stake the first load of stone I get against that last year's mains'l of yourn we show you the way into the harbor."

"I've got to use the power to take her out through the channel," says the owner, laughingly. "That's where your old centerboard scow has it on my daddy longlegs. But I'll turn off the juice at the pierhead—and your next cargo 'll make a fine dry stone wall at my summer place."

"Yep," says Top Boots, "but you'll pay me for it and I'll bring it to you in quick time, with a new fores'l and pair of gafftops'ls cut out of your old mains'l."

"You're on!" sings back the owner, and with that the Ferguson breaks out a rusty mudhook and slides down the channel under foresail and jibs, her centerboard hove up so that she bids defiance to the bars.

Old Abijah notes the gleam of her new mainsail, as it creeps up, throat and peak. He sighs. He has seen mainsails come and mainsails go, and it's many the long day since there's been a scrap of new canvas on the old Speedwell.

"The Ferguson's first trip," he gasps. "Oh, if I only had a tug to yank her off, the Speedwell'd make her first trip this week, too!"

Suddenly a long, white, sharp nose shoots past the cove. It's the White Horse. Her spars are bare yet, but the jibs are up in stops, the mizzen is loose, and all hands are busy casting off the mainsail gaskets. She's going out under power. Opposite the cove she rounds up until her engine holds her against the current. The tender, manned by two Swedes, again shoots from her, trailing a long four-strand line.

"Ahooy de hooker!" hails Jan. "Mak' dis fas', good and fas', and de Boss say we give you yerk off de mud, so!"

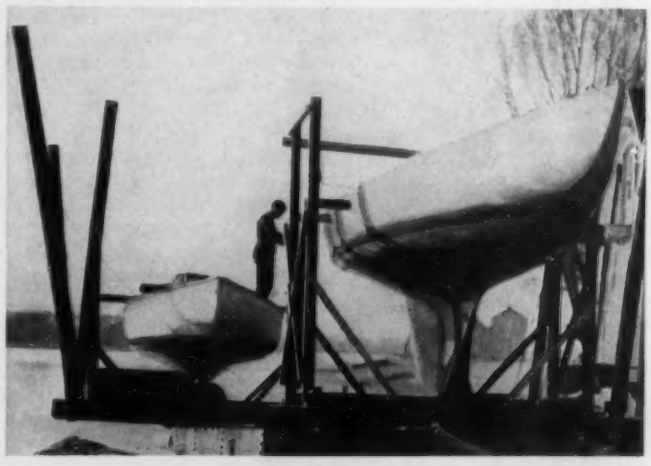
"Why!" exclaims Abijah, "ye can't, surely? Y'ain't got the weight! Y'ain't got the power!"

"Fifty horse," says Jan with pride, "and twenty ton of lead on de keel."

By this time the Swedes have unceremoniously bent the big line to the Speedwell's foremast, close to the deck, and ere the doubting Abijah has ceased pumping the White Horse has "gone ahead." The line tautens, spinning the drip from its vibrating length, then sags a little as the hulk at the end of it slides forward, straightening up as she comes clear. The White Horse, shortening up the line until she is alongside with a great array of canvas fenders protecting her, makes fast again, gives the half-waterlogged craft a "kick" with all the skill of a practised harbor tug, and lets her go on across the bay to the safety of the level sandspit, where Abijah may pump her out at leisure.

Meantime Top Boots has been proving himself a good sport by standing off and on at the harbor entrance instead of taking the big start he could have got for the twenty mile race. He keeps his fore gaff-topsail clewed up for manœuvring, but as soon as the White Horse's glistening mainsail soars aloft he squares away, sheeting home his fore kite while his rival breaks out jibs and runs up topsail.

He's no farmer, is Top Boots, if he does look it. He has known all along that this gusty April breeze will give him what he calls a "wung-out" course to town, which is the Ferguson's "best holt"—likewise the White Horse's worst. Out sizzles the main sheet to starboard. Out runs the fore sheet to port, and with sails spread wing and wing, her booms lifting like drum sticks, her centerboard hove up in the box and a smother of foam under her bows, the Ferguson rushes after the sweeping wave tops at a ten-knot clip. The White Horse, going



"POLISHED TILL THEY GAVE BACK THE RAYS OF THE SUN LIKE CURVED MIRRORS"

dead before it without a spinnaker, is painfully reminded of her 9 feet of draught.

The two great lake birds, one grey, one gay, wing it side by side for miles until they fade even out of the ken of the keen eyes that from painting stage and bos'n's chair and scraping-triangle have watched them from the moment of "making canvas."

The last gleam of sail cloth has gone and the workers realize that the sun is low. "Lock up before night" is the invariable rule in the unfenced shipyard "if you'd find things in the morning." Everybody's honest—but things disappear in the dark. The yachtsmen pat affectionately the sides they have smoothed and scraped and polished until they give back the low rays of the sun like curved mirrors. Then they pack up their tools and pull off the overalls, ere they hasten back to the city and its great white ways. The thrifty hooker men fill their blue derry aprons and smocks with fragrant pine shavings and pungent red oak adze-chips for the evening fire and sling their tool baskets over their backs. From the brimming pools on the river's rim swell the vespers of the frogs. A cold pale sliver of the moon that will mellow in May whitens in the fading west. The workers are homeward bound.

"ON HER WUNG-OUT COURSE TO TOWN"

The old lighthouse keeper locks up the shed when all are gone, silently pulls down the river in his skiff, and lights the harbor lamp for the first time this season. On his way back he passes the recently much tilted Speedwell, now floating light and water free, just as Abijah puts off from her in his punt.

"She's tight as a bottle now, John," confides the latter, without preface.

"Glad of it," returns John laconically. "But 'Bije,—your eyes is keen as a night hawk's—read me this telegram the boy from the station chucked me after I'd locked up the lighthouse."

"Sure," says keen-eyed old 'Bije, peering at the paper in the deepening dusk. "It says, 'Let Ferguson have our old mainsail, stowed in loft of shed with spare gear.'"

"Why," says John slowly, "that's from the White Horse man. He must 'a lost the race after all!"

"Well," says 'Bije, who has heard all about the bargain, "the Speedwell's first cargo's going to be a load of flat stones for that gent's dry wall, and it ain't going to cost him nothin', neither."

Some Hints on Examining the Power Plant of a Second-Hand Boat

By WILBUR H. YOUNG

WHEN purchasing a second-hand motor boat considerable care should be used in the examination of the motor. When it is possible, the best procedure is to have the engine removed and taken to a first-class machinist, who has had considerable experience in repairing gasolene engines, and let him go over it thoroughly. At best the novice can only ascertain a few of the essential points which show whether the engine has received proper treatment.

If the motor has been used by one who understands the proper methods of operation it is much more likely to be in serviceable condition than otherwise, and this point should be looked into and receive due consideration.

The appearance of an engine on the outside, while not indicating the condition of the internal parts, nevertheless shows, to a certain extent, whether the previous owner was careful in the handling of it, though many an old cripple has received a good sanding down and a new coat of enamel, finished off with a little varnish, which if properly applied works wonders in the external appearance.

The crank shaft bearings should be looked to and if worn to any considerable extent they should be replaced. A worn crank bearing is especially detrimental to the efficient operation of a two-cycle motor, as it permits the loss of base compression. This is much more noticeable when running at slow speed, as the oil or grease which lubricates the crank bearings takes an appreciable amount of time to be forced out by the crank case compression and, consequently, at high speeds will not be entirely forced out by the compression before the vacuum caused by the up stroke pulls it back again.

A good plan is to start the engine (even if the boat is on land) and let it run a few minutes at a moderately slow speed, pumping the cooling water from a pail if necessary. Note the effect of the muffler and examine the exhaust piping for leaks. If there is a reverse gear this too can be tried for its forward, neutral and reverse positions—care being taken to first ascertain that the propeller is free from all obstructions before starting the engine.

Vibration will be more noticeable when the boat is hauled out, but excessive vibration should not be present. The propeller shaft should be observed while it is turning to see if it is true or bent, and any knock should be noticed and, if possible, located approximately.

Watch the fly wheel for any irregular movement indicating that it is very much out of balance or loose, or that the crank shaft is bent. The reverse gear should also be looked after in a similar manner.

The ignition apparatus should be examined to see that each cylinder is firing properly. If box coils are used it should be ascertained if they are in good condition.

The water and oil should then be shut off and the engine run *without oil or water* until the outside of the cylinder becomes hot enough to be slightly uncomfortable to the hand. This will burn off all of the excess oil from the cylinder walls and also enable you to feed some grease or oil to the crank bearings, which should be carefully observed for leakage if the engine is of the two-cycle type.

The engine should then be stopped and the compression tried on each cylinder by throwing the fly wheel until the piston nears the top of the stroke and holding it there a few moments. If the resistance decreases, it indicates a loss of compression or broken

piston rings. It is well to try this again when the engine cools off. If the compression is very poor either the cylinders will have to be re-bored, the piston trued up or new rings installed.

Loss of compression in a four-cycle motor may be caused by leaky valves, bad piston rings or worn cylinder or piston. If caused by the valves having a poor seat, the air can be heard escaping where the piston is brought to the top, in which case the valves will need re-grinding. Sometimes a push rod operating the valves may become stuck. This would hold the valve open and would be indicated by that cylinder showing no compression at all.

Many an engine has shown an excellent amount of compression when the cylinder has had a good dose of grease or oil but would spin around with small effort after being run without oil for a few minutes. As an indication of good compression an engine in first-class condition with a cylinder of 5-inch diameter would require a strong effort by a good husky man to move the piston up and over the top center by turning the fly wheel.

Remove the spark plugs and rock the fly wheel to ascertain if the connecting rod and wrist pin bearings are still in serviceable condition. If they are not, some play will be observed. This play may also have caused a knock when the engine was running. A loose fly wheel will also cause a knock but the remedy is easy and obvious.

If play is observed when rocking the fly wheel it can be located by taking off the hand-hole plates and turning the fly wheel until the crank pin bearing is next to the hole. Then take a large screw driver and place it in under the top bearing or head of the nut on the connecting rod bolt. Using the edge of the hand hole as a fulcrum move the connecting rod forward and aft. It should show a slight amount of end play. Then move it up and down. If it shows any amount of play that bearing should be taken up. If not, the play is either in the wrist pin or the fly wheel. Place a block of wood under the connecting rod and resting on the crank case to prevent the crank shaft from turning, and try to move the fly wheel. If the fly wheel is loose it will be apparent; if not, the play is then certain to be in the wrist pin bearing. If the cylinder head is removable it can be taken off and the connecting rod bolts taken out to permit the removal of the piston, when the wrist pin and the rings may be examined.

If broken rings are found they should be replaced, care being exercised in doing so, as the rings are usually made of cast iron and are easily broken.

If the wrist pin or its bushing shows wear, it can be remedied by replacing the bushing. Where the wrist pin shows a small amount of wear it may be remedied by having the new bushing made with a smaller hole than the original one but it should be fitted to the wrist pin. A new wrist pin, however, is the better solution as they are inexpensive.

It may be that the wrist pin is fastened into the piston and the bearing is at the connecting rod, in which case the play, if any, can be taken up in the same manner.

Especial care should be used when examining the entire engine to ascertain if there are any cracks or flaws. These are frequently hard to find, particularly in the cylinders and base, if the engine has been repainted.

The above points are about all that the purchaser can, with the conveniences at hand, go into, and should the engine show any evidences of wear and hard usage it would be better to have it looked over thoroughly by a competent machinist, preferably in his own shop.

These hints cannot be properly applied to engines of large horse-powers, say above 25 or 30, and when purchasing a boat with large power it will pay to employ a competent engineer to make a thorough examination and furnish a detailed report. It will be money saved in the end.

Where a second-hand engine alone is offered for sale it is well to ascertain as much of its previous history as possible, and particularly the reasons for selling it. As a general proposition the purchase of a second-hand engine is very risky, and too much emphasis cannot be laid upon the fact that about 80 per cent are sold for the sole reason that they have outlived their usefulness and can be classed with scrap iron in value.

What Makes a Hydroplane

The American Power Boat Association Defines One

THE committee of seven appointed at the recent meeting of the A. P. B. A. to so define a hydroplane as to make it possible to separate this type from displacement boats in racing events has drafted the following definition, which will hold in all events run under that body this summer. They have also divided this type into four fixed classes, to be raced without time allowance.

A hydroplane is a racing boat whose propeller acts in or against the water, and which has one or more of the following characteristics:

a. One or more breaks in the longitudinal continuity of the immersed surface; or an underbody having one or more superimposed lifting surfaces.

b. An area of immersed transom exceeding 33% of the immersed midship section area taken at 50% of the load water line. (These areas shall be actual immersed areas measured with crew on board in their racing positions. If by virtue of any peculiar form of stern the transom area cannot be readily measured, the maximum submerged depth of hull shall be multiplied by the maximum submerged width of hull at any point within 15% of the overall length from the stern, and this product considered as the area of the transom.)

c. A rating of more than 16 times the square root of the load water line length.

Hydroplanes shall be divided into four classes for the purpose of scratch racing. Racing boats of all types shall be eligible to compete in these classes.

There shall be no restriction on the number, size or horsepower of the engines or motors in the special classes, except that each boat shall contain and be fitted with such mechanical power as will drive her astern at a rate of speed not less than 2½ knots an hour in these classes.

No time allowance in these classes.

20 *ft. class* shall consist of boats of 20 ft. overall length and under.

26 *ft. class* shall consist of boats of less than 26 ft. overall length.

32 *ft. class* shall consist of boats of less than 32 ft. overall length.

40 *ft. class* shall consist of boats of less than 40 ft. overall length.

In handicap races, hydroplanes shall be raced separately from other racing boats, and shall be rated and handicapped according to the rating formula and handicap table used for other racing boats.

Lashings and Seizings for Emergency Use

By W. E. PARTRIDGE

THE necessity often arises on board of a boat for making emergency repairs on a broken spar or tiller, for fastening two cables or ropes together quickly, for seizing an eye or a turn in a rope, or for making a quick seizing for any cause. As a rule the amateur sailor, while he can handle his boat in good shape, has not much knowledge of handling rope beyond a few of the simple knots and bends. In this short article I have described a few of the most useful forms of lashings and seizings, the knowledge of which may come in handy frequently to the motor boat or sail boat skipper.

For instance, there may be need for a temporary eye in a rope, or for fastening two ropes together securely without making a splice. This is accomplished by seizing the two parts of the rope or ropes together. When properly put on a seizing may be made as strong as the rope itself.

We begin by taking a small line or rope for the seizing itself and putting an eye splice in one end. Then, taking a loop of the desired size, in the rope in which we wish to make an eye, this small line is passed around both parts of the rope where they cross, as shown in Fig. 1, the free end slipped through the eye already spliced in, drawn taut, and an odd number of turns passed around the two parts (say 5, 7 or 9 times). Each turn lies close to its neighbor and is drawn up taut. See Fig. 2.

The winding is then carried backwards over the turns already in place, to the beginning. These later turns will be one less than those underneath them, and are called riding turns. They are shown in Fig. 3. The free end is then secured with a clove hitch about the rope.

The last step is to take the loose end of the eye and seize it fast to the main part of the rope. This makes an eye that is perfectly secure and yet one which can be cast off very quickly.

The rope itself has not been unlayed or made shorter, as would have been the case had an eye splice been used.

In doing this in a large rope where a good strain must be put upon the seizing to get the turns taut, more purchase can be gotten than by the hands alone by using what the sailors call a Spanish windlass. Why it is called a windlass is easy enough to see but why "Spanish" no one seems to know.

The windlass is made by using two marlin spikes and taking a turn or two around each of them with the ends of the seizing with which we are making the eye, and which is already around the parts of the large rope, and heaving on them. To hold the ends of the seizing fast to the marlin spike so as to get a purchase, the timber hitch is employed in the manner shown in Fig. 4.

In using a braided line for a seizing, it is apparent that it is impossible to splice an eye in the end of it, so the next best thing to do is to use a timber hitch instead. This is just as secure as a splice and much neater than any knot that can be made in braided cord.

When it is necessary to make two hawsers fast together securely and yet in a temporary manner, a racking seizing may be employed. In this form of seizing each turn grips nearly the whole circumference of each rope.

Each turn passes around one rope, down between the two and around the other rope in the opposite direction, making as it

Fig. 1
Beginning a seizing for an eye.

Fig. 2
Nine turns of the seizing in place.

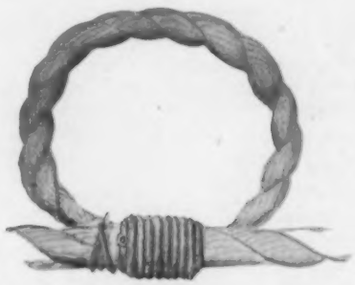


Fig. 3
Riding turns in place.

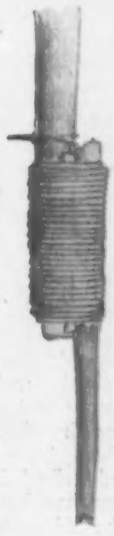


Fig. 6
A broken spar or tiller spliced or "fished" and secured by wedge driven under seizing.

Fig. 4
Timber hitch around marlin spike used in seizing.

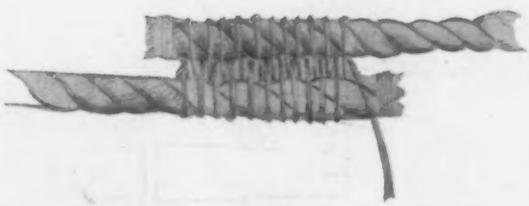


Fig. 5
(333) A racking seizing, first turns.

were a course like the figure 8. In Fig. 5 is shown a racking seizing between two ropes, that has just been begun. After the turns have all been drawn taut, riding turns are carried back over them as before described.

There are various ways of making a finish for a racking seizing. One of the simplest is to pass the end between the main ropes, twice around the seizing itself and then make fast to one of the large ropes with a clove hitch. Sometimes the seizing is finished with a wall knot, if it is of small stuff, or it may be finished with a reef knot. It may then be begun without an eye splice in the seizing so that there may be two ends free.

If it is ever necessary to "fish" or splice a broken spar or a tiller it is done as in a seizing job, if a rope or line is used. The friction between the line or seizing and the stick is less than that which the line has on larger ropes, so that in "fishing" or splicing a spar a greater number of turns are necessary, but the method of procedure is about the same. The splice can be made more secure by driving wedges of wood under the turns where the parts of the spar come together.

A spar spliced in this way becomes stronger at the splice than at any other part. The method of putting on the seizing is shown in Fig. 6. Riding turns are carried back and the hollow spaces between the two parts of the stick are filled with wedges. The ends of the lashings are secured by clove hitches around the spars. Sailors think nothing of making a splice in a broken spar, and while awkward, it is strong.

The Chicago Yacht Club One-Design Class

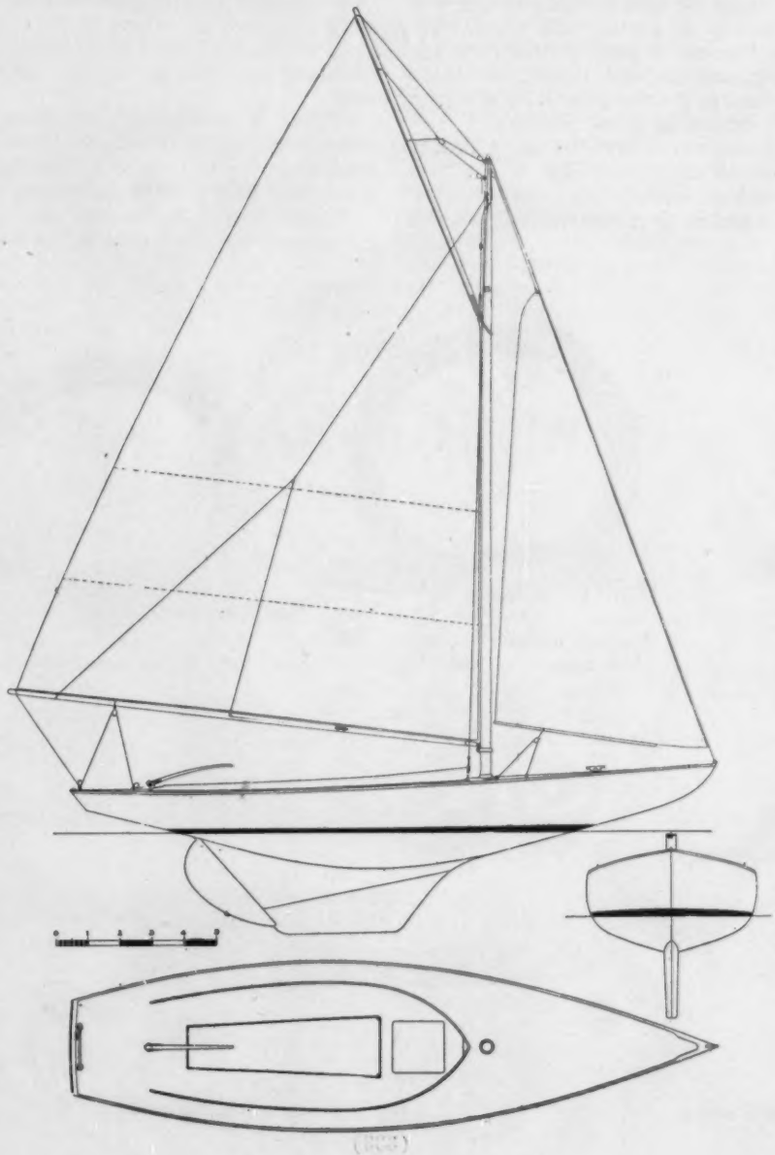
THE Chicago Yacht Club has planned to have lots of racing next season, for, in addition to the regular annual fixtures which this club holds, a new one-design class has been formed for afternoon racing and day sailing. While the boats are small the members of the Chicago Yacht Club believe that lots of sport can be had with craft of this size, and many owners of large yachts will build and sail in this class. The boats were designed by B. B. Crowninshield.

The principal dimensions are:

Length Overall	20 ft. 4 in.
Beam	5 " 4 "
Draft	3 " 4 "
Freeboard at bow...	2 " 4 "
" " stern .	1 " 4 "
Sail area	227 sq. ft.
Ballast	785 lbs.

They are keel boats with all ballast outside. These little craft are very handsome, have graceful ends and a pleasing underbody. The cockpit well is long and narrow, the decks being used for seats. There is a hatch just forward of the cockpit so that sails and gear may be stowed below. They should make extremely handy and able little boats for the size. Fourteen of them have already been subscribed for and the order has been placed with the Milwaukee Boat Building Co. They will be strongly constructed of the best of material and with good finish.

The Chicago Yacht Club has adopted rather a novel plan in connection with this class by appropriating $3,000 to build and maintain three of these little boats at the club's expense. This was done conditionally that enough members subscribe and take up boats to form a successful class. Such a step by the club was a particularly good one, and other clubs desiring to start one-design classes would do well in adopting this plan. By doing this any club could place these boats at the disposal of some of the non-boat owning members who are good sailors.



If this plan was carried out in the proper spirit it would result in the development of good sailors, particularly among the younger members, by giving them an opportunity to handle and race boats that they could not get otherwise. It would also make club membership more attractive to those who do not own boats, but who would be likely to do so at some future time. If those clubs that are financially able would give an impetus to any proposed class by offering to build one or more boats in such a class, it would be much easier to get a sufficient number of members willing to build to make up a good-sized field.

The members of the Chicago Yacht Club have also displayed a lot of spirit this year by forming a syndicate to build a Class P boat to meet the Royal Canadian Yacht Club challenger Patricia, for the new Richardson Cup. This boat is being designed by Wm. Gardner and built by Wood at City Island, N. Y.

BOW AND STERN VIEW OF 20-FOOT ELCO-PLANE EXHIBITED AT THE NEW YORK SHOW

A 20-Foot Elco Hydroplane

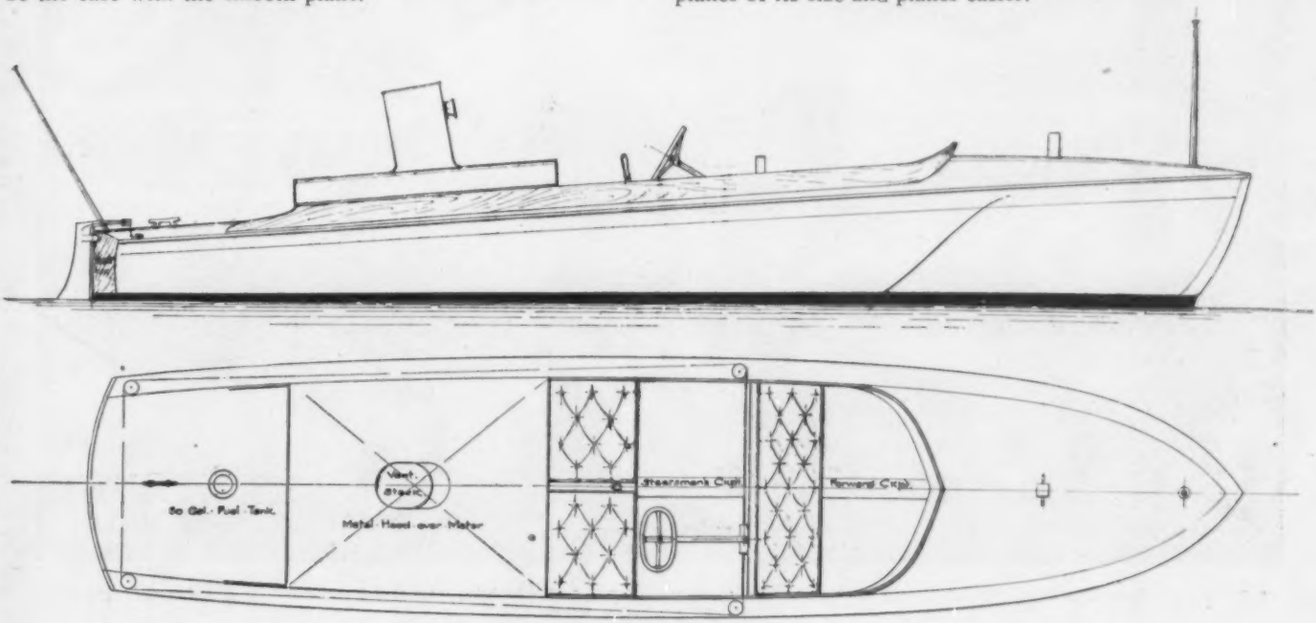
ONE of the boats at the New York Motor Boat Show that attracted great attention was the new 20-foot Elco-plane, designed and built by the Electric Launch Co., of Bayonne, N. J. In model this boat is very much like the little 16-foot "plane," The Bug, which made such a wonderful record last year.

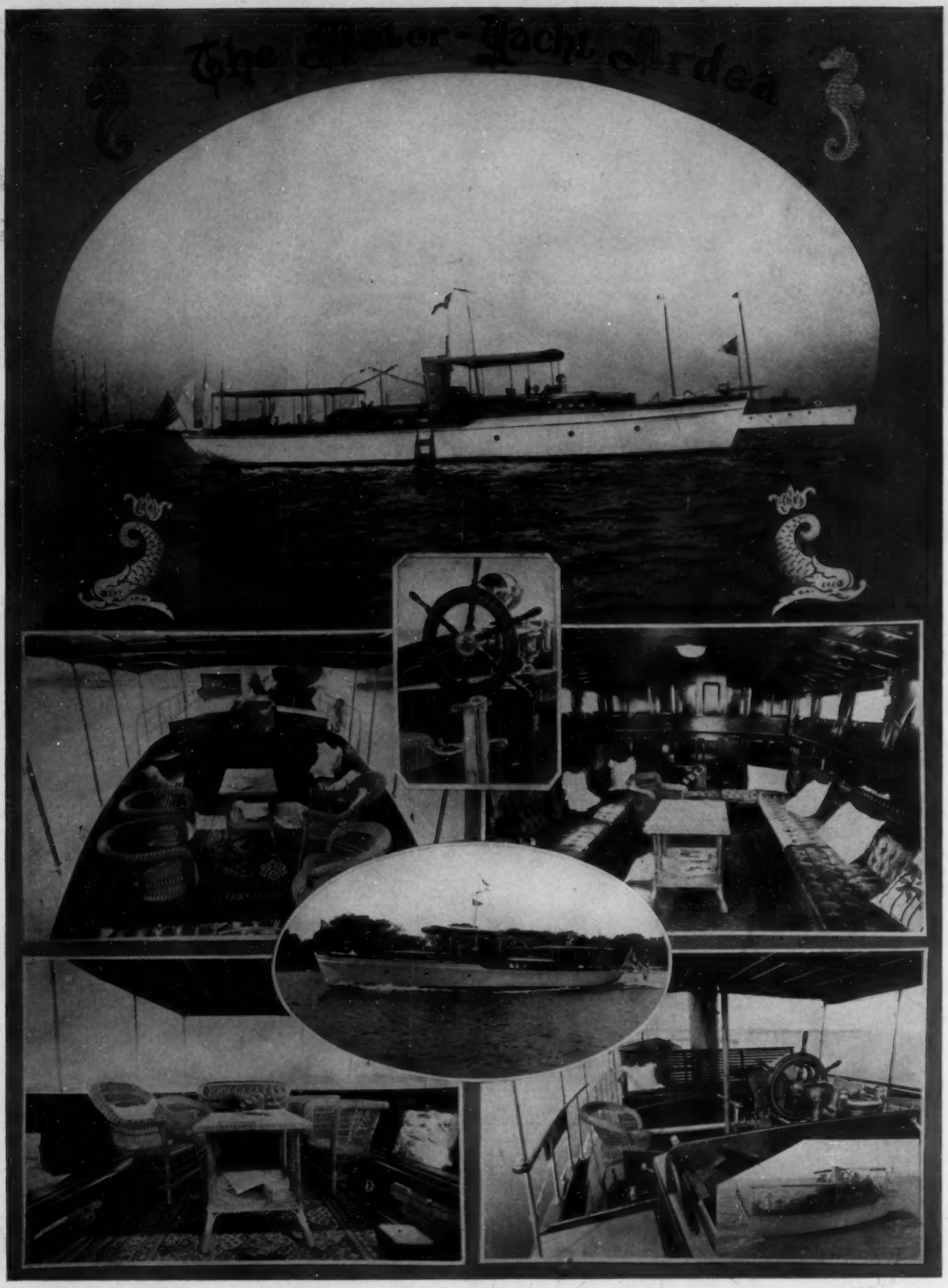
The length of this new Elco plane is 20 feet over all, beam 4 feet 6 inches and draft to bottom of propeller about 2 feet, the draft of hull, of course, being practically nothing when the boat is planing. In the Elco plane the stem is round instead of plumb as is the case in most hydroplanes, the sides of the boat being slightly concave, with the chine piece extending upward at the same angle as the stem, some four or five feet aft of the forward end of the boat. This gives a sharp bow, tends to eliminate pounding or slapping and insures good lifting qualities. The bottom planking of the boat is continuous, the steps, which are of bronze, being attached to the bottom of the boat. These bronze planes have corrugated sections, giving great longitudinal strength and preventing her from sliding or skidding as is apt to be the case with the smooth plane.

The arrangement of the boat is excellent, the cockpit being forward and containing two 'thwarthship seats capable of holding four passengers. The two after seats are raised slightly and it is from these that the boat is handled, the steering gear coming up through the bulkhead aft of the forward seat. The engine is located aft of this cockpit and is covered by a metal hood in which a small brass stack insures plenty of air to the carburetor. This hood can be raised by means of movable supports.

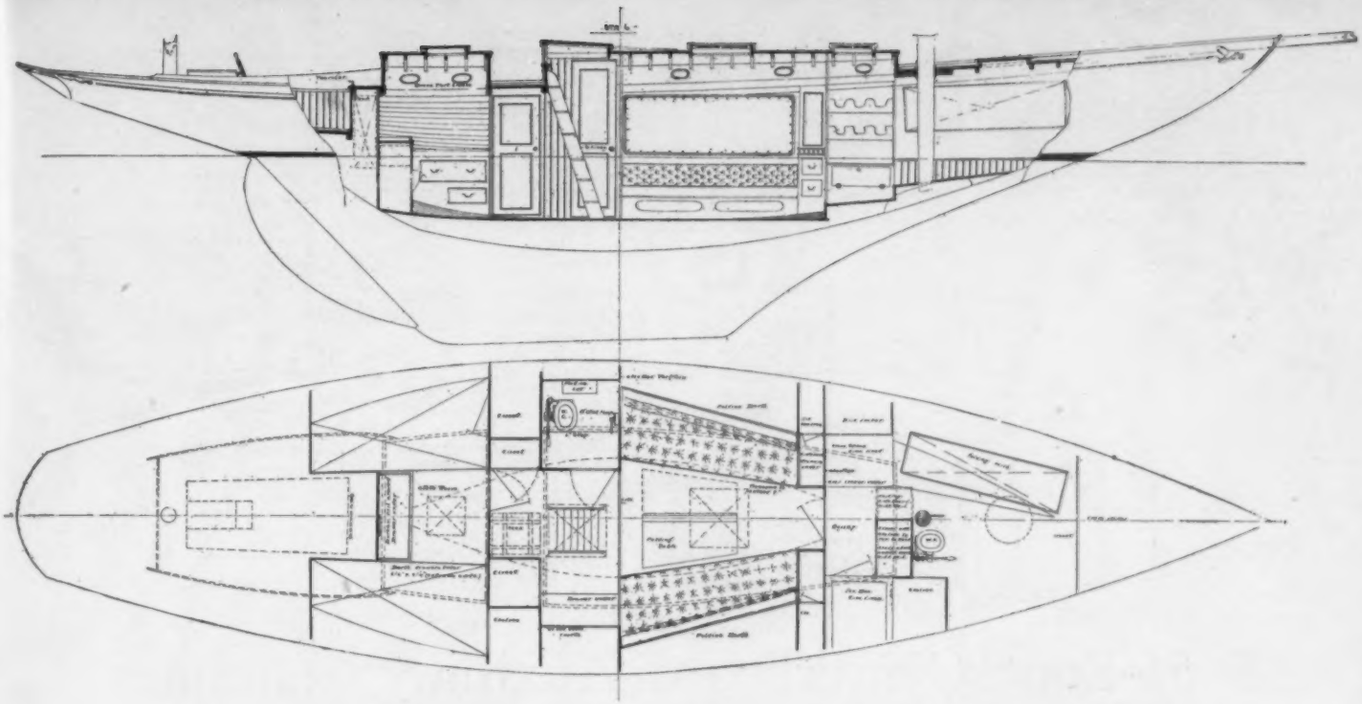
The power consists of a six-cylinder Elco engine of 60-70 H. P., which gives a guaranteed speed of 35 miles an hour. Engine control and reverse gear handle are located at the engineer's seat. The propeller shaft goes out under the engine at a slight angle, insuring the highest possible propeller efficiency.

The boat is built and finished to the highest grade of Elco construction with oak keel, sawn frames, yellow pine stringers and engine trusses. The planking is of mahogany, copper fastened throughout, with decks and interior finish of the same wood. By this special design of the Elco-plane the Electric Launch Co. claim that the boat can carry more weight than other hydroplanes of its size and planes easier.





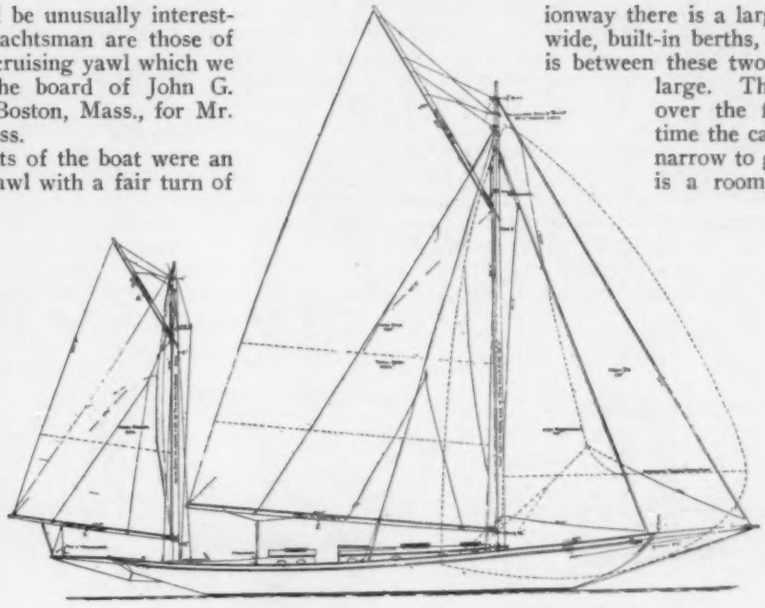
A HANDSOME 62-FOOT POWER CRUISER DESIGNED BY MR. GEO. A. ANTHONY AND BUILT BY THE MATTHEWS BOAT CO. 50 H.P. STANDARD ENGINE. SPEED 12 MILES AN HOUR



A 30-Foot Water Line Cruising Yawl

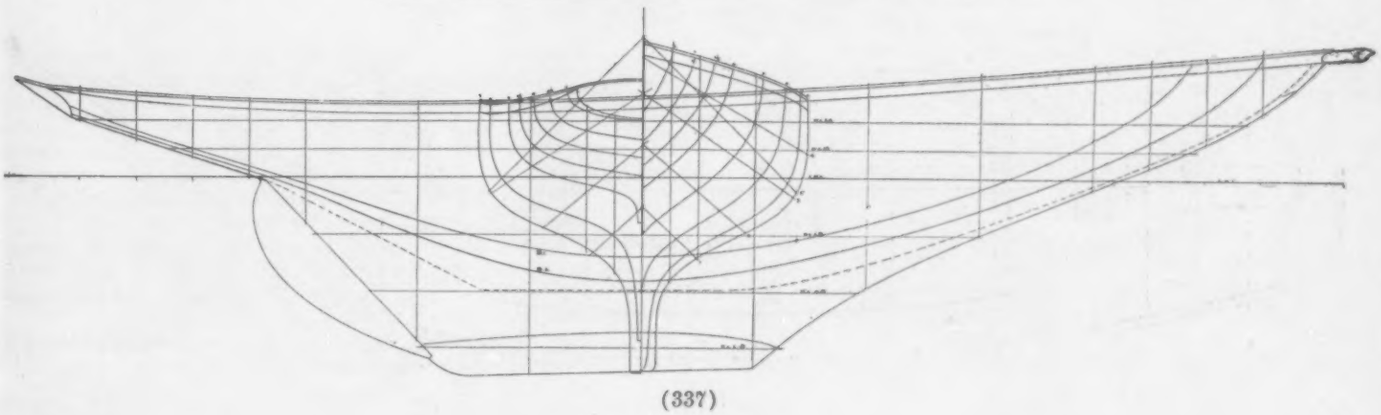
A SET of plans that will be unusually interesting to the cruising yachtsman are those of the 30-foot waterline cruising yawl which we reproduce herewith from the board of John G. Alden, Naval Architect, of Boston, Mass., for Mr. Philip Chase, of Milton, Mass.

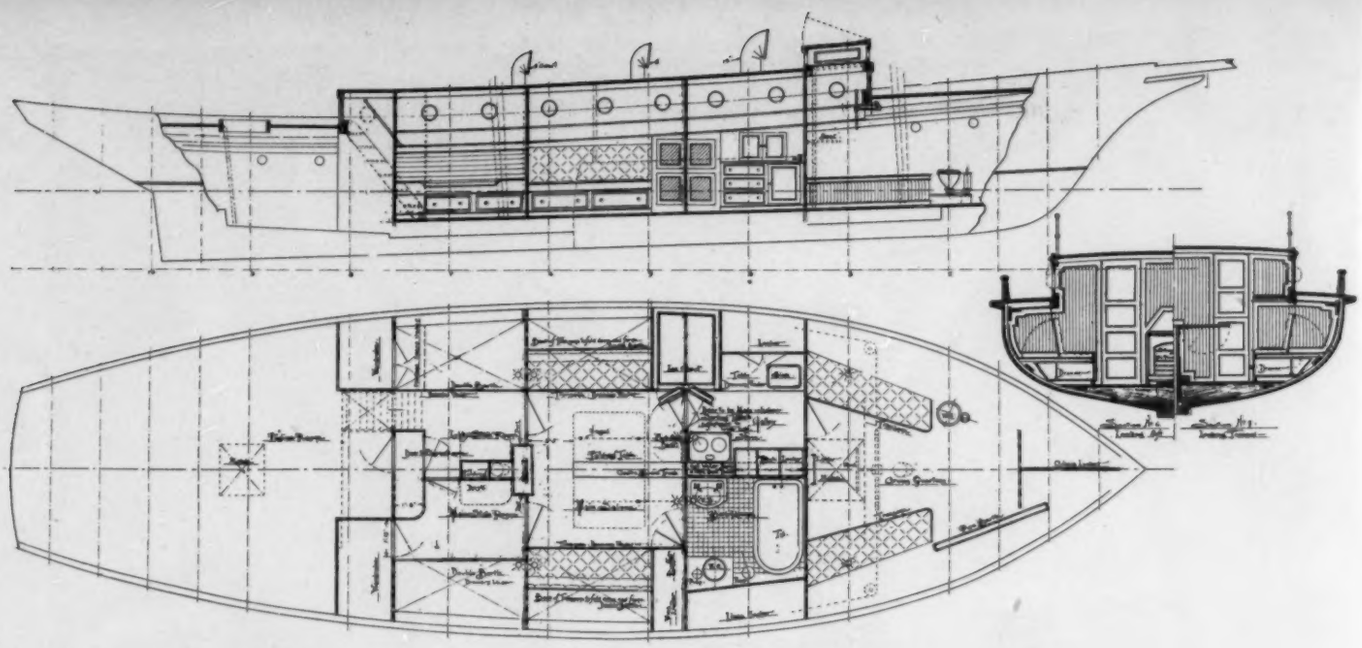
The principal requirements of the boat were an able, comfortable, cruising yawl with a fair turn of speed, the dimensions being: Length over all 47 feet, length waterline 30 feet 6 inches, beam 12 feet and draft 7 feet 6 inches. She has 11,000 pounds of outside lead ballast.



The lines are unusually good, showing a pleasing sheer, good displacement, sharp entrance and clean run. There is a roomy main cabin with a wide transom on each side, above which is a folding berth. Aft of the companionway there is a large double stateroom with two wide, built-in berths, bureau, etc. The toilet room is between these two apartments and is unusually large. There is 6 feet of head room over the floor space and at the same time the cabin house has been kept quite narrow to give liberal deck room. There is a roomy forecastle forward with a pipe berth, and the boat can be easily run with one paid hand, though she has the accommodations of the average cruiser of ten feet more length.

A 10-H. P. auxiliary engine will be installed under the companion steps, where it is out of the way, the gasolene tank being suspended from the under side of the deck to one side of the passageway between the two cabins. This gives her fair speed under power.





A 56-Foot Centerboard Auxiliary Schooner

THE accompanying plans are of an auxiliary schooner from the board of J. Murray Watts, Naval Architect, Philadelphia, Pa., for Mr. Powell Evans of that city. In designing this schooner it was the owner's desire to get a boat in which he could go on fishing and ducking expeditions on Delaware and Chesapeake bays and be as comfortable as in his own home. The boat amply fulfils these requirements, being 56 feet long over all, 46 feet on the water line, 16 feet 9 inches beam and 4 feet draft.

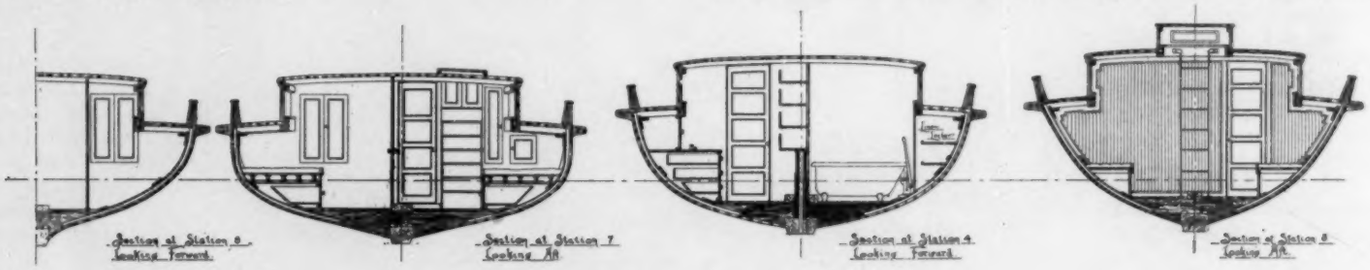
She will be fitted with a 40 H. P. 4-cycle gasolene engine, located in the engine room under the after deck, which is flush. This power will give the boat a speed of about 7½ nautical miles under power. She will be rigged as a pole masted schooner and will carry a good sail spread. When under sail she will be steered from aft with a regular Edson screw type steerer. When under power she can be handled from a wheel house in the forward end of the deck house.

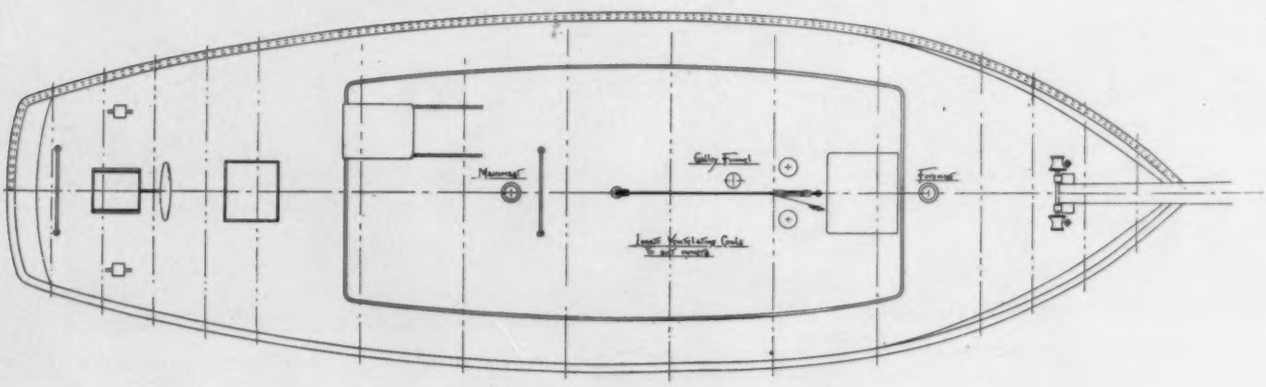
The cabin is entered by a flight of steps from the after deck leading to a lobby on the port side. This lobby has a double berth in it and can be used for a stateroom. There is another stateroom on the starboard side. Amidships there is a large dining saloon, 16′ wide, with sofa transoms on either side, and a Franklin stove at the after end.

Forward of the main saloon is a large bathroom on the starboard side and a galley on the port side. The galley is fitted with a Webb perfection range, and the usual ice chest, sink and lockers. The coal range has a hot water back which supplies hot water to the bath tub and wash basin in the owner's bathroom.

In the fore peak are the crew's quarters with accommodations for three men, and a toilet. There is a raised hatch over the crew's quarters with glass set in at the sides.

Owing to her great beam she should prove very stiff and able, while with the rig she has she can be easily handled under sail by one man, all the sheets leading aft close to the wheel.

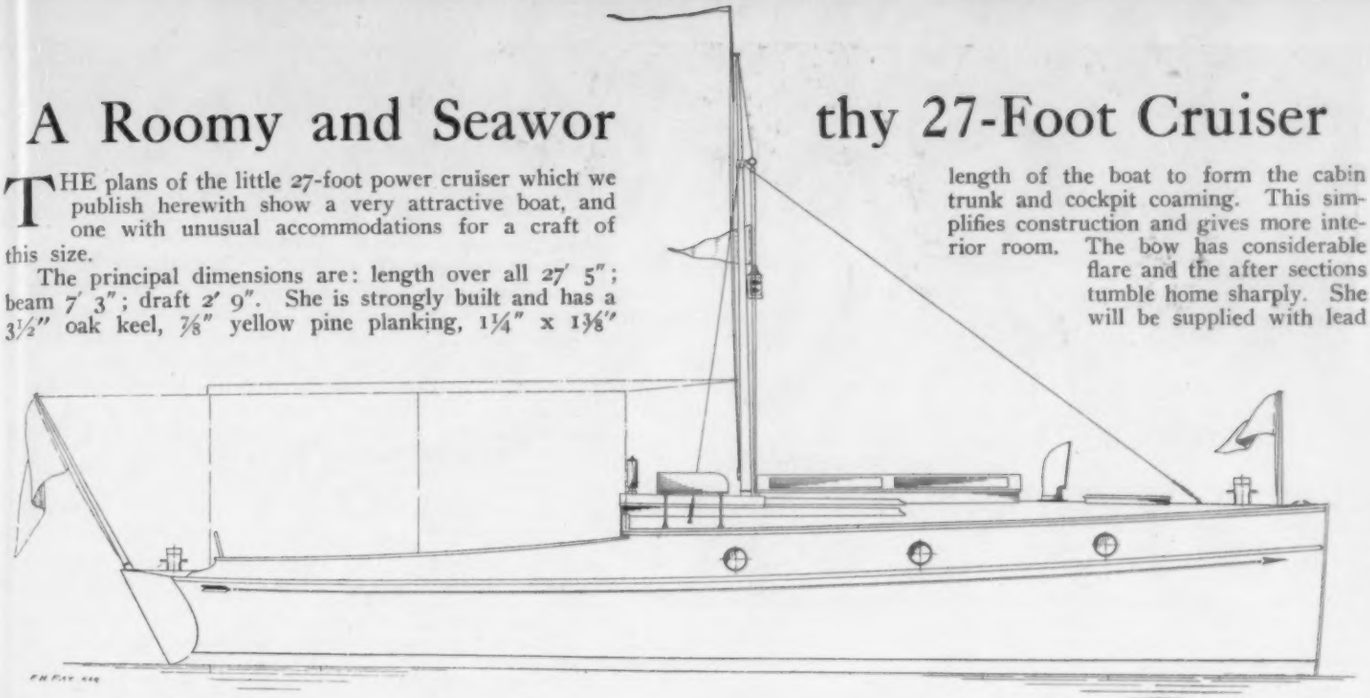




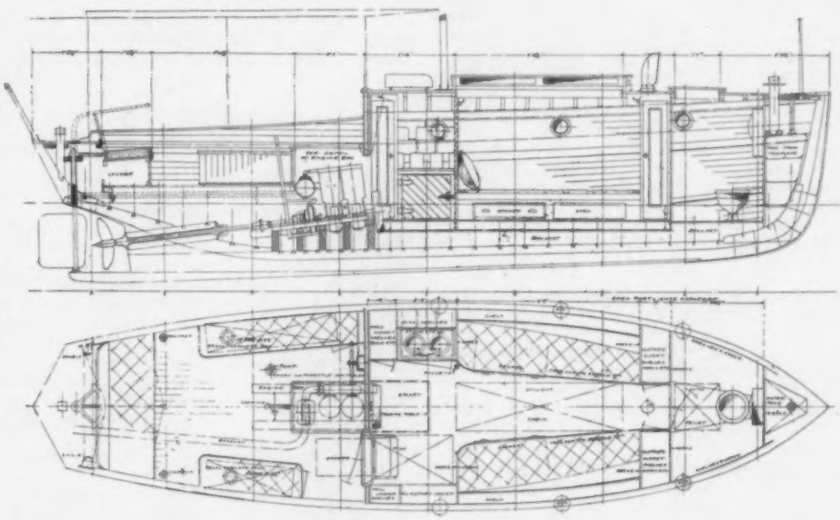
A Roomy and Seaworthy 27-Foot Cruiser

THE plans of the little 27-foot power cruiser which we publish herewith show a very attractive boat, and one with unusual accommodations for a craft of this size.

The principal dimensions are: length over all 27′ 5″; beam 7′ 3″; draft 2′ 9″. She is strongly built and has a 3½″ oak keel, ⅞″ yellow pine planking, 1¼″ x 1⅜″ frames, hard pine stringers, oak beams, etc. The decks are canvas covered and the cockpit floor is yellow pine.



The boat has a plumb stem and Normand "V" stern, while the lines indicate unusual seaworthiness. She is particularly deep with good dead rise, the frames aft being of an "S" section, making her easy to steer when running before a sea. Good freeboard is obtained without spoiling the symmetry of the profile by carrying up the sides the entire length of the boat to form the cabin trunk and cockpit coaming. This simplifies construction and gives more interior room. The bow has considerable flare and the after sections tumble home sharply. She will be supplied with lead ballast and bilge keels to prevent rolling. The cockpit is watertight and had seating accommodations for eight comfortably. The cabin is unusually roomy and has comfortable cruising accommodations for two or three persons, the galley being very well found for so small a boat.



The engine is in the forward end of the cockpit, covered by a box, and is of 10 H. P., which should drive her 8 miles an hour. The boat was designed by Swasey, Raymond & Page, for F. H. Fay.

The Importance of Bilge Ventilation

AT the first glance this may seem unnecessary, although every skipper appreciates a well-ventilated cabin and engine-room. And yet the question of bilge ventilation is worthy of very serious consideration on the ground of safety. Owing to the fact that gasolene vapor is very much heavier than air (about two and one-half times) any gasolene that drips from the tank or carburetor sinks to the bottom of the boat, and in the average craft it stays there and may cause an explosion many months later. The presence of water in the bilge makes no difference. Gasolene is lighter than water, and rising to the surface enough air is present to form an explosive vapor—a pretty rich mixture, in fact, that will readily explode if ignited; perhaps by the magneto, or even by the timer if this is placed close to the floor, or not unlikely by a match dropped into the bilge from the hand of a careless smoker.

Indeed there is more danger from an explosion in the bilge than most boatmen imagine. The tank is commonly regarded as a danger point, yet a full tank of gasolene cannot explode.

To prevent, then, the danger of explosion, the vapor must be gotten rid of. It may be driven out by opening up the fore and after hatch and floor boards, creating a draft through the boat. If a windy day is selected for doing this most of the vapor will escape. However, a ventilating system of some kind is more efficient, and as the skipper can easily put in some simple device to do the trick at a trifling cost, every boat—be it runabout or cruiser—should be so equipped.

Perhaps the best way to accomplish this in cabin boats of the raised-deck or hunting cabin types is to mount a hooded ventilator on the deck close to the bow, and bore a few holes through the sheer strake at the stern. The holes need not be large and if placed close up to the finishing bead they will be unnoticed. The ventilator will lead the air to the forward bulkhead which boxes in the tank, and circulating through the bilge under the floor will escape through the holes in the transom. Or, in place of the holes, brass screw-top ventilating ports may be screwed in transom or on after deck, which may be opened or closed.

Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest, will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Concerning Size of Propeller for Runabout

Middletown, Conn.

I have a 20 x 5-foot runabout type of hull, medium weight, powered with 2-cyl. 2-cycle, 2-port engine, 4 9-16 inch bore, 5-inch stroke, turning 17-inch by 30-inch "speed" wheel 510 R. P. M., but boat only makes 8 miles per hour. I would ask your advice regarding a more efficient propeller, or your opinion as to whether I am getting all the speed I may reasonably expect.

Boat has square, transom stem, and fairly easy lines, but considerable deadwood. She attains full speed when starting, and stops when shutting down engine almost in her own length. This may simply be due to her lightness, however. M. S. C., Jr.

With a motor of the size you describe it would seem that you should be able to obtain a speed better than 8 miles per hour from your boat. The fact that the boat stops within her own length when the power is shut off is no indication that she is of faulty design, but may merely mean that her weight is not sufficient to give her great momentum.

I would have to know the normal speed at which the motor is designed to develop its greatest horsepower before I could advise you as to a change in propellers. If the motor should turn at 800 r.p.m., for example, and the wheel in use holds it down to 510, it is evident that the propeller is either too large or has too great a pitch, and a smaller one of less pitch should be obtained. If, however, 500 or 510 r.p.m. is the normal speed of the motor, I do not see how matters could well be improved, except possibly by getting a better-shaped wheel.

Replacing 2-Cylinder Engine by 3-Cylinder

Toronto, Can.

Will you kindly advise me what advantages, if any, there would be in replacing a 2-cylinder engine I now have in my motorboat with a 3-cylinder engine?

Would you consider the extra cost, etc., and advantages gained sufficient to balance when you take into consideration that the 2-cylinder engine is in good shape?

As full an explanation as you can conveniently make will be greatly appreciated? G. P. P.

It is impossible to answer your question intelligently and in detail without knowing the power of the motor to be replaced, the size of the hull in which it is located, and the speed capable of being attained by the boat. Assuming that you are contemplating replacing your present 2-cylinder motor with one having 3 cylinders of the same size, you would obtain an increase in power of approximately 50 per cent. Under some conditions, this increase would be advantageous, while under others it would be practically wasted. It must be remembered that the power necessary to drive a displacement boat increases approximately as the cube of the speed; and even this ratio will not hold true if the boat is already being run at nearly the maximum speed for which it was designed.

On the one hand we have the greater cost, the increased space occupied, and the changes necessary in the engine bed before the 3-cylinder motor can be installed, merely to obtain 50 per cent. greater power, for you say your present motor is in good condition. If speed is what you are after, it may be worth it; but while a 3-cylinder motor may be slightly smoother running than a 2, there is not sufficient difference to warrant a change for this reason alone. The more cylinders there are, the greater number of parts are there to be cleaned and overhauled every season—but this also is a consideration that must rest entirely with you.

All Kinds of Questions Concerning 2-Cylinder Motors

Le Roy, Ill.

As a new reader of YACHTING, I would be very glad if you can enlighten me on the following questions:

1. Will a 2-cycle gasolene marine motor, designed for a working speed of 600 R. P. M., and developing 24 horsepower, develop 12 horsepower at 300 R. P. M., and if not, about what power may be expected at half speed or less?

2. Will the motor lose efficiency in the consumption of fuel at less speed than designed for, or use more gasolene per unit of power delivered, when working at less than full load or rated power?

3. Would a 2-cycle motor of the marine type be subjected to overheating if connected to an automobile radiator cooling system, instead of using fresh water all the time, and does a 2-cycle motor require twice as much cooling water as a 4-cycle motor working under similar conditions?

4. Some marine motor builders state that their motors consume one pint of gasolene per hour per horsepower developed. How does this compare with 4-cycle motors?

5. Do 3-port 2-cycle marine motors develop more power on the same quantity of gasolene than 2-cycle motors, and what is the advantage or disadvantage, if any?

6. Is the water brake testing apparatus the same as Prony friction brake and upon what principles does it act for absorbing H. P. in testing marine motors?

7. Can more power be obtained from kerosene as a fuel for marine motors than the same quantity of gasolene working under similar conditions, and does combustion take place with same rapidity. Would it be necessary to clean motor cylinders quite frequently using kerosene as a fuel?

8. Is a 1 or 2-cylinder motor more steady under heavy working conditions (of the 2-cycle type)?

9. What type of friction clutch is most used for power purposes up to 24 horsepower? J. G. H.

1. If the motor is held down to 300 R. P. M. by throttling or retarding the spark, the power developed will be only about half of that delivered at 600 R. P. M. If, however, it is a heavy load, such as a large wheel, the power developed by the motor at full throttle and proper spark advance on 300 R. P. M. will be more than half its rated H. P. A motor is supposed to develop its greatest H. P. at its normal speed, but variations from this speed will not affect the power proportionately unless the throttle or spark are used to obtain said variations.

2. A motor is supposed to be most economical as regards gasolene consumption when working at full power with a load that does not reduce the R. P. M. below the normal amount.

3. I would by no means recommend the use of an automobile radiator in connection with a marine motor, unless used as a stationary outfit. If a fan is used and the radiator so placed that it will receive all of the air from the motion of the boat and the prevailing wind, the arrangement may give satisfaction, but such a contrivance would be merely an additional complication, that would give absolutely no benefit over the continuous supply of cold water obtained from outside. While a two-cycle motor will require more cooling water than will one of the four-cycle type running at the same speed, the ratio will not be two to one. Probably 50 per cent. more water would be sufficient in the former case, but the pump of the motor will be designed to deliver the proper amount at whatever speed it is operated.

4. It is but few two-cycle motors that will attain the fuel economy of 1 pt. per H. P. hour. Some four-cycle motors may reach or exceed this, if the power is not too conservatively estimated. As a rule, the gasolene consumption of a two-cycle motor will be about 20 per cent greater than that of a four-cycle motor of the same power.

5. The three-port, two-cycle motor is simpler and has less parts than the two-port type. The former type uses more gasolene, however, and is occasionally liable to base explosions that will not be found to the same extent in the two-port type. For all-around use, however, the three-port motor is generally considered to be the better.

6. By the water brake testing apparatus, I imagine you must mean the dynamometer, in which the resistance of a wheel supplied with buckets or vanes turning in water is used to absorb the power. In this case, any centrifugal pump or water wheel, in which the amount of water pumped is measured, can be used as a water dynamometer. The Prony brake is a friction dynamometer in which water is used to cool the periphery of brake wheel.

7. Kerosene has the same number of heat units per pound as gasolene. The former is heavier, however, and consequently the heat units per gallon are greater. As the power developed by a fuel is dependent upon the heat units obtained, kerosene is a more concentrated fuel—by volume—and if the motor is especially designed for the purpose, the power ob-

tained by kerosene as a fuel should be greater than that obtained from gasolene. With a properly designed kerosene motor, combustion should take place about as rapidly as when gasolene is used, and there should be no more trouble from carbonization from one than from the other.

8. There is more constant and even torque with a two-cylinder motor than with one having but a single cylinder, and consequently the former is preferable—other considerations being equal.

9. There are a number of good makes of friction gears on the market suitable for motors up to 24 H. P. Many of them are advertised in YACHTING.

Power for Auxiliary Yawl

Bridgeport, Conn.

I have a 33′ o. a. x 12′ x 3′ 6″ yawl which had, when purchased, a 5-H.P. M—— engine. In a head wind and tide she would not move. In the harbor she would make about 4 miles per hour. I am intending increasing the H. P. to either 12 or 18 H. P., 4-cycle. There is hardly room for the 3 cyl. 18 H. P. unless a universal joint is used; would a 12 H. P. 2 cyl. 4-cycle with proper propeller and pitch be enough? How much speed could I get with either? Would I be gaining enough to warrant getting the greater H. P. and would you advise placing a 4-cycle engine under cockpit floor of sail boat? R. D. M.

I do not wonder that you have trouble in making progress against a head wind with your 5-H.P. motor in a boat the size of your yawl. A 12foot beam with only a 33-foot overall length would not be a proportion conducive to speed, and would offer a large wind resistance. Assuming that you obtain 4 miles per hour with the 5-H.P. motor, this would be increased, approximately, to 5.36 and 6.22 miles per hour with the 12 and 18 H. P. respectively. Whether this would be a sufficient gain to warrant the change rests with you, but the increased power would enable the boat to run against a head wind successfully. The use of a universal joint in an engine installation offers no serious objection; but I would not recommend that the power plant be located entirely under the cockpit floor. It is very inaccessible there.

The Ever-Present Power Tender Problem

Boston, Mass.

My boat is the 35 W. L. sloop Sakuntala. In ordinary sailing I tow a power launch. The launch is all right in ordinary weather and we have no more than the usual difficulty in towing in heavy weather. In going off on a club cruise, say the Eastern, for example, I might have a fair show to hold a good position in the day's run if it wasn't for towing the launch or tender. I can carry a rowing tender on deck but can't carry the power tender. Yet I should want the power tender after we got to Boothbay or Bar Harbor.

In calm weather I could get a man or boy to follow the fleet in the launch and in 9 days out of 10 it would be all right, but if a fog should shut in or there was a heavy sea running it would be bad for the power tender.

I would be willing to buy or trade for a tender that was more seaworthy if such are made, but I fear such a boat would be harder to tow. I could, of course, carry my rowing tender and ship the power tender to Boothbay or Bar Harbor. What's the answer? S. A. H.

You are certainly up against quite a problem. Before answering your question definitely I should like to know what you mean by a power launch. Is it a regular 12 or 13-foot power tender?

I should think that your problem would be solved either by buying or having built a regular 12 or 13-foot power tender, designed especially for being towed, equipped with a motor of about 2 H. P. This would be plenty big enough for use running around and even for towing the yacht at a pinch; and by either using a feathering propeller, of which there are several good makes on the market, or by removing the propeller entirely when the boat is to be towed for any distance, I do not think the drag would be excessive on a yacht the size of yours, especially if the tender were lightly built and properly designed. If a light engine were used, such a boat could be easily carried in the davits of a 35-foot waterline sloop.

I have had some experience with power tenders and find that it is the propeller that is the greatest drag in a boat that is properly designed. Some of these feathering propellers are absolutely feathering and drag very little. If such a tender is not big enough for you I should say that the easiest way would be to ship the power tender by freight.

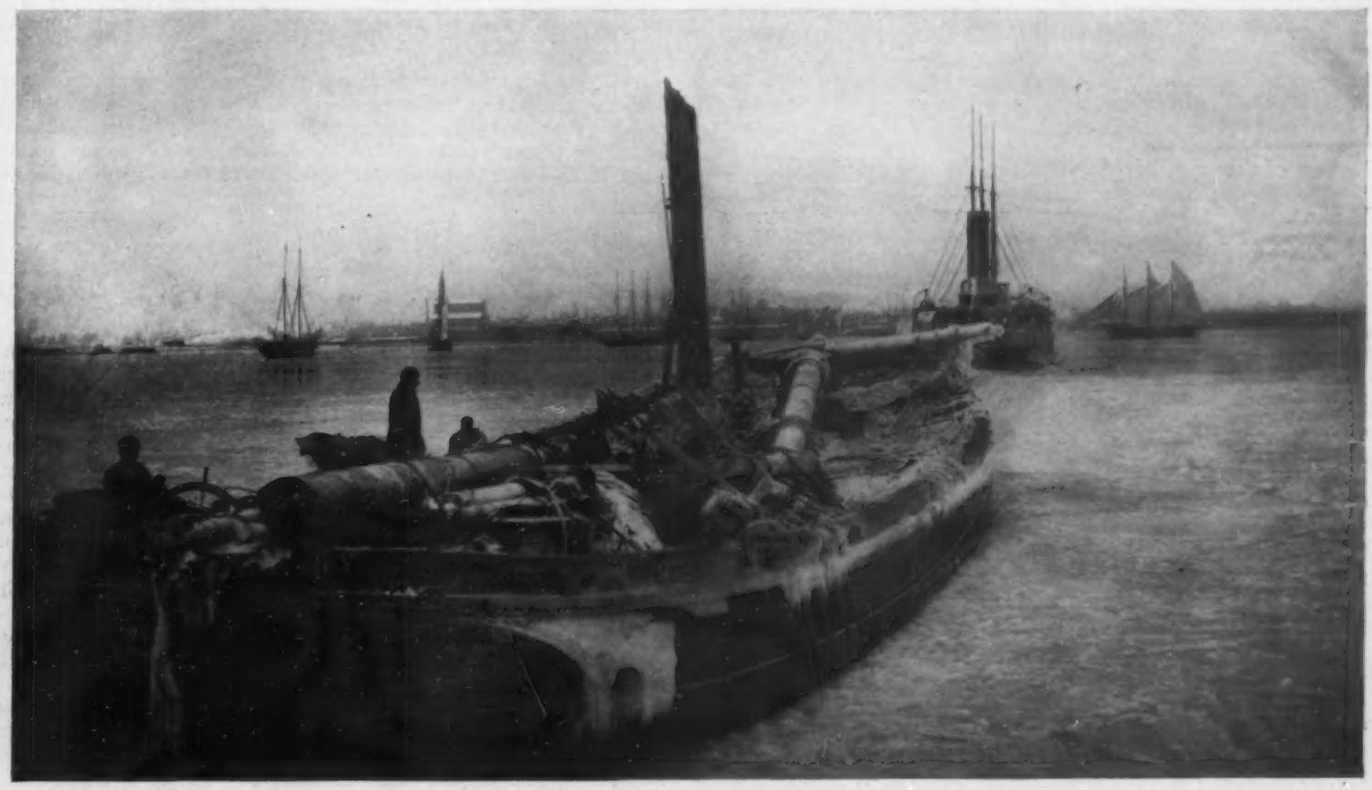
Propeller Slip

Brooksburg, Ind.

Will you kindly tell me if you think a change of propeller will give me any more speed, if so how much; and if you recommend a change what wheel do you recommend?

I have flat bottom boat built like a skiff, 16 ft. l. o. a., 50 in. beam at top, 37 in. at bilge, ½ in. oak sides, 7 in. draft at bow; 4-H.P. engine, 4 in. x 4 in., turning a 13 x 18 3-blade propeller 700 R. P. M.; plumb V-transom stern. I get a speed of about 7 M. P. H. Does not this figure an excessive propeller slip? F. L. McK.

The slip on the propeller of your boat seems excessive, as it is slightly over 36 per cent. 25 or 30 per cent is generally sufficient, and I believe that the use of a 14 x 14 two-bladed propeller would help. But even with such a change, I doubt if you could obtain better than one-quarter or one-half a mile increase in speed.



THE EFFECT OF A HARD WINTER ON THE COAST. DISMASTED SCHOONER PICKED UP OFF CAPE COD.

A Challenge for the British International Trophy.

That the British intend to have another try for the Harmsworth trophy this year has been assured by the receipt of a challenge by the Motor Boat Club of America, holder of the British International Trophy, naming a new Thornycroft boat which is being built for Mr. D. Hanbury. Following close upon this is the news that Mr. E. Mackey Edgar, owner of Maple Leaf III, will also send a new boat over for this event. The Motor Boat Club of America has accepted these challenges, fixing August 31st and September 2nd as dates for two of the races. It is said that Mr. Hanbury's boat will be a 40-foot hydroplane, though differing from the former models, and it is hinted that tank experiments have shown the model to be a great improvement over former types. Mr. Mackey Edgar is having a specially designed and constructed boat of the Saunders-Fauber type by the builders of last year's Pioneer. It is expected that a third boat will be added to the team before long.

In the matter of defense America is apparently, at this writing, very much better prepared than last year. We still have the Dixie IV (her hull can be readily repaired), while a number of new defenders have been planned and are already under way. A number of 40-mile or better boats are practically assured, and while it is never well to be satisfied before any event, the outlook is much more promising than it was at this time last year when it seemed certain that all our faith was to be pinned to one boat. Commodore Pugh is building a new boat in place of the Disturber II, from which great things may be expected; Tams, Lemoine & Crane are building a 32-footer; Mr. Albert J. Smith and Commodore J. Stuart Blackton each has a boat that should show championship form this year, and there are a number of other possibilities.

Echoes of the Manhasset Cup Protest.

Following the decision of the committee having charge of the Manhasset Challenge Cup race last year, which decision disqualified Joyant and Corinthian, the Indian Harbor Yacht Club, which Joyant represented, has indirectly carried the matter to the Yacht Racing Association of Long Island Sound by asking for a ruling on the right of a regatta committee to throw out the measurements of the official measurer in a contest. The following is the correspondence in question:

NEW YORK, Dec. 4, 1911.

Executive Committee, Yacht Racing Association, Long Island Sound.

Gentlemen:—Our club asks for a ruling by your committee on the following questions:

In case a yacht is protested under rule 18, paragraph 2, of the Rules of the Association, and the Regatta Committee instructs the measurer to remeasure such yacht, and the yacht is remeasured and the measurer reports that the yacht is within her class, is that decision final, or can the Regatta Committee overrule such a decision and determine otherwise?

Second—In case the measurer is of the opinion that the rule does rate the yacht fairly and that the yacht does in every respect comply with the requirements of the rule, and he awards a certificate of rating considered by him equitable, which rating puts the yacht fairly within her class, has the Regatta Committee any further jurisdiction in the matter and can such committee overrule such report of the measurer? This under rule 2, paragraph 7. Respectfully submitted,

E. BURTON HART, FRANK BOWNE JONES,
Representatives of the Indian Harbor Yacht Club.

Executive Committee's Answer

Feb. 14, 1912.

Mr. Frank Browne Jones and Mr. E. Burton Hart:

Dear Sirs:—In reply to your favor of December 4, 1911, I am instructed by the Executive Committee of the Yacht Racing Association of Long Island Sound to advise you that the following are answers to your questions of above date:

First question—It is the opinion of this committee that the decision of the measurer is final. The language of the rule is explicit. It is understood, however, that such decision should be supported by an exhibit on the part of the measurer of his measurements and calculation by means of which he has arrived at the decision. It is not concernible that his measurements can be disputed, but it is reasonable that the methods and calculations by means of which he attains his final result from such measurements shall be open to the scrutiny of the committee.

Second question—It is the opinion of this committee that paragraph 7 of rule 2 covers only cases in which the measurer reports that he cannot rate a boat fairly under the measurement rule. When a measurer gives a yacht a certificate of measurement his action is final and beyond question, excepting in case of protest. As a general proposition a regatta committee has nothing whatever to do with rating a boat, excepting in cases when the measurer reports that he cannot rate a boat fairly. The fact that a measurer issues a certificate of rating is of itself evidence that the boat rates fairly. The Regatta Committee must accept the rating, subject only to protest on the part of the persons interested. Sincerely yours,

JAMES W. ALKER, Secretary, Y. R. A. of Long Island Sound.

It would seem from this ruling of the executive committee of the Long Island Sound Yacht Racing Association that the decision of the measurer of this matter was final and that the regatta committee in charge of the Manhasset Cup series did not have authority to rule the boats out after remeasurement by the measurer, subsequent to the protest. This ruling, however, does not settle the matter by a long shot, and it is still up to the Indian Harbor Yacht Club or Seawanhaka-Corinthian Yacht Club to make the next move.

The Race for the Richardson Cup.

Speaking of the forthcoming race between the Chicago Yacht and Royal Canadian Yacht Clubs, to be sailed at Chicago this Summer for the new Richardson Cup, which was put up to stimulate international racing on the Great Lakes while the Canada's Cup is gathering dust and verdigris in the Rochester Yacht Club locker, The Flashlight, the organ of the Erie Yacht Club, says the following:

"If the racing conditions need changing, we wish that while at it they could be changed so as to restrict entrances to yachts designed and built on the Great Lakes and sailed by Corinthian members of the contesting clubs. As to the yachts themselves they have *often*, we believe, been designed in New York City, or in Scotland, or almost anywhere else, even if built on the lakes, while in at least one instance an American yacht club employed a Canadian to design and build a yacht which was duly entered—and defeated—in the trial races."

To this sentiment we give hearty approval, believing that by such restrictions an impetus would be given to yacht designing and building along the shores of the Great Lakes. Granted, that up to the present yacht designers of prominence have not found enough business along the Great Lakes to make it profitable to settle there, it is conceivable that if the question were brought home forcibly to both the sailing and power boat men along the Great Lakes, it would result in their placing their orders with local designers; and certainly there is enough business, both present and prospective, to warrant the development of yacht designing and building in those localities.

The Motor Boat Law.

Since our last issue it appears that Congressman Sherwood has withdrawn House Bill No. 15,786, aiming to appeal the law of June 9, 1910, relative to the equipment of motor boats, but has substituted in its place Bill 18,788, drawn up by one of the members of the Committee on Merchant Marine and Fisheries, which aims to amend the former act of June 9, 1910, in regard to motor boats not being required to carry licensed officers. The new bill provides that when carrying freight or passengers for hire, or engaged in fishing as a regular business, motor boats of class three (40 to 65 feet) and vessels 65 feet or more in length, propelled by machinery other than steam, must be in charge of engineers and pilots licensed by the Steamboat Inspection Service in the manner now provided by law for the examination and license of engineers and pilots.

This bill is now in the hands of the Committee on Merchant Marine and Fisheries and stringent efforts are being made to prevent its passage both by the organized power boat associations, boat and engine manufacturers and by yacht clubs.

THIS TEST PROVES

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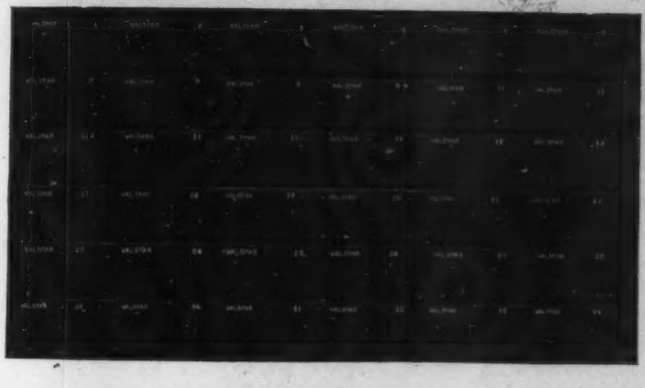
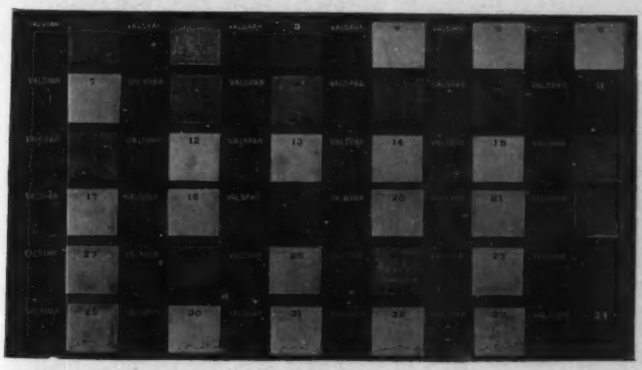


BEFORE

A Three Months' Water and Weather Test



AFTER

These mahogany panels were varnished on alternate sections with three coats of Valspar, and on each of the other sections with three coats of another spar varnish. The thirty-six best known makes from all over the world.

The panels were then exposed to the alternate action of water and weather. First a week in the water—then a week in the weather—then back in the water—then out in the weather, and so on for three months.

The test left Valspar alone unharmed—its life and lustre absolutely unimpaired. The others had cracked, whitened, and perished! This is the severest possible test for varnish or for any other material intended for marine use.

We challenge the world to devise a more severe *practical* test than this or to produce a more *durable* marine varnish than VALSPAR

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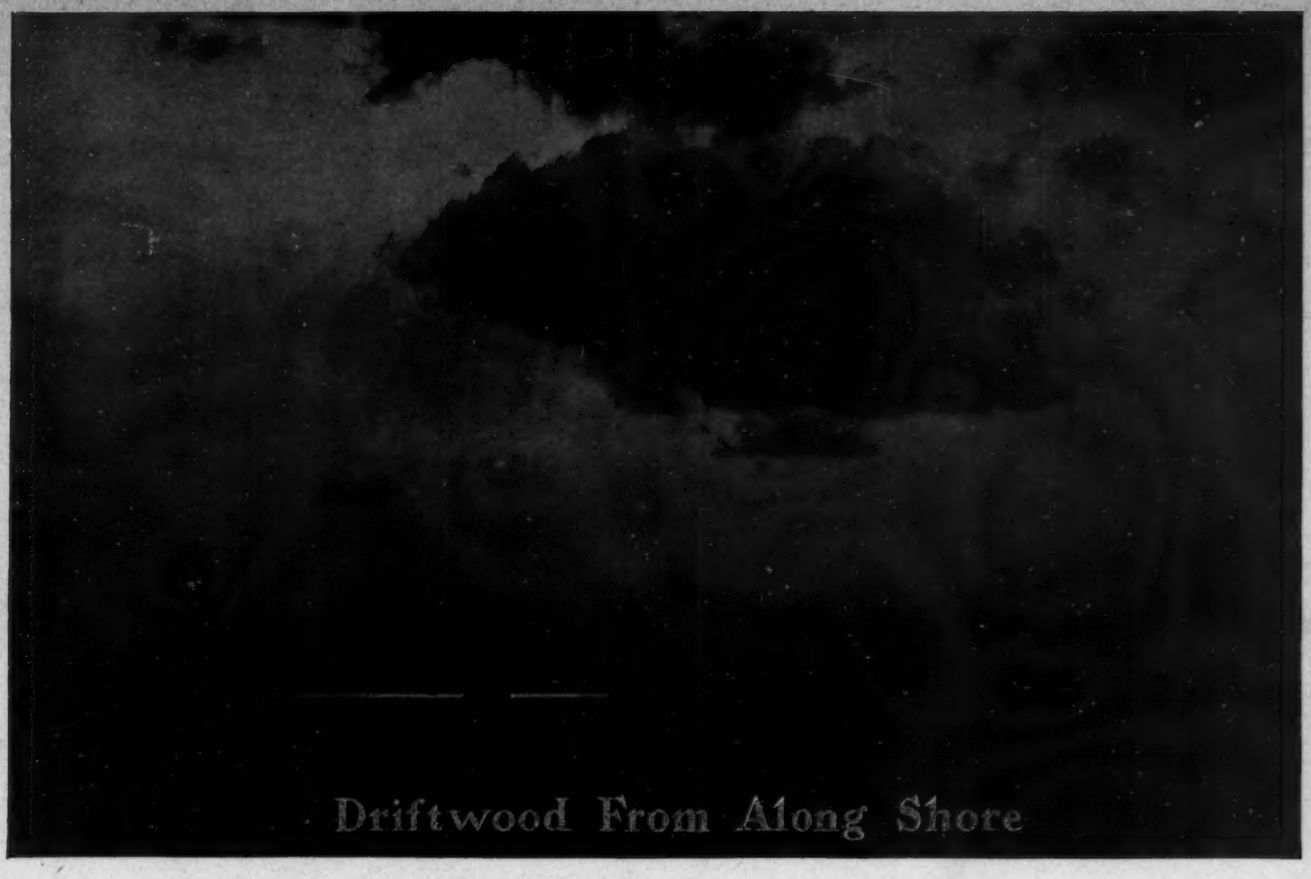

Driftwood From Along Shore

Mississippi Valley Power Boat Association Regatta July 4-6

The Mississippi Valley Power Boat Association, whose 1912 regatta will be held at Davenport, Iowa, July 4, 5 and 6, will offer cash prizes in the big classes that are expected to bring the greatest boats in the country west this season.

The championship classes remain as in the past, open to all entrants in the 40-foot, 32-foot, 26-foot and 20-foot classes. At a recent meeting, however, the association added three new classes for small boats, entrants for which will be confined to members of clubs affiliated with the Valley association. These classes are for one-, two- and three-cylinder speed boats and were established to permit the smaller racing men to remain in the game without being compelled to compete with the big champions.

The cash prizes offered in the championship classes will be as large (or larger) this year as at any previous racing event. The 40-foot class will offer at least $1,000 cash and a thousand-dollar silver cup for first place with correspondingly valuable prizes in the other classes.

As the Mississippi Valley Power Boat Association's races will be the first of the big events in the United States, some of the new boats now being built will be seen for the first time at these races.

For One Measurer for all Massachusetts Bay Yacht Clubs

An interesting mark of confidence has been bestowed upon the Massachusetts Institute of Technology in the move made by the Eastern Yacht Club Regatta Committee to have Professor Harold A. Everett appointed official measurer by all the clubs in Boston Bay. This will at once secure uniformity of measurement and assure the highest scientific skill in settling any question that may arise. It is a good move, and one that should be followed in other localities, as it should do away with many of the present measurement disputes.

Mr. Everett is assistant professor at the M. I. T. in the department of naval architecture and marine engineering of which Professor C. H. Peabody is the head. It is a department of splendid reputation, which is shown by the fact that all naval constructors are required to take a course at Technology after graduating at Annapolis.

Annual Waterway League Dinner

The annual dinner of the Waterway League of Greater New York and Long Island was held at Kismet Temple on February 17, and the interest in the movement and the league's affairs was shown in the fact that the facilities of the temple were strained to the utmost. It was "sure some dinner" and the enthusiasm knew no limit. One might say of that dinner what the California man said when asked the price of his land: "The land isn't worth much, but the climate, $10,000 an acre."

The Waterway League, of Greater New York and Long Island, was organized February 22, 1909, and incorporated under the laws of the State of New York March 15, 1909. Some of its aims and purposes are:

To unite all who are interested in our waterways for pleasure or profit.

To purify and improve our tidal waters for the protection of public health and morals for the common good.

To return to the farms the enormous quantity of crop-producing material which is being constantly wasted by the consumption of farm products in our cities and allowed to be lost by escaping into the ocean as sewage, thereby depriving the farm (soil) of these valuable and necessary fertilizing ingredients, and polluting our bays, rivers and harbors, which if allowed to continue will ultimately leave only unproductive, barren soil and make our beautiful bays, rivers and harbors disease-producing cesspools and our seafood unfit for consumption.

To procure just recognition of the needs of those who enjoy water sport, in the distribution of public funds set apart for recreative purposes.

To make navigable waters safe by prevention and collecting drift, removing obstructions and procuring necessary lights and buoys.

To open inland waterways connecting the bays and harbors of New York and Long Island by the State and National Government.

To encourage the study of navigation. To encourage heathful water sport. The League has already accomplished much in the way of improvements along the lines mapped out.

The New South Shore Power Boat Club

A large and enthusiastic meeting was held in Chicago, on February 4 by owners of power boats and the South Shore Power Boat Club was formed.

At the next meeting of the organization the question of erecting a club house in the vicinity of Jackson Park will come before the club. D. H. Webb has been elected Commodore; L. W. Crandall, Vice-Commodore, and C. R. Rhodes, Sec'y.

Officers of Hartford Y. C. for 1912

Commodore, Charles A. Goodwin; Vice-Commodore, Francis R. Cooley; Rear-Commodore, Charles H. Symonds; Treasurer, John Ernest Stewart; Secretary, Edward B. Barker; Measurer, H. D. Olmsted; Fleet Surgeon, J. F. Axtelle, M.D.; Chaplain, Rev. E. DeF. Miel; Historian, F. E. Dayton; Trustees, Hosmer P. Redfield, Louis F. Heublein.

Race Committee, Harry D. Olmsted, Chairman; Marcus A. Potter, William J. Crosley, John S. Spencer, Henry L. Huntington, Frederick E. Innes.

The Commodore announced the appointment of Gilbert F. Barby as Fleet Captain.

WECKLER-FAUBER HYDROPLANES
WITH
GUARANTEED HIGH SPEEDS

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A RACING AND PLEASURE BOAT

THE WECKLER BOAT COMPANY has recently received license to build the well-known Fauber patented Hydroplane. Fauber Hydroplanes have demonstrated their safety, seaworthiness and speed. Pioneer, Disturber II, Red Top III, and many other famous boats are Mr. Fauber's design. The Fauber Hydroplane is patented in all parts of the world. We are prepared to build any size WECKLER-FAUBER HYDROPLANE desired.

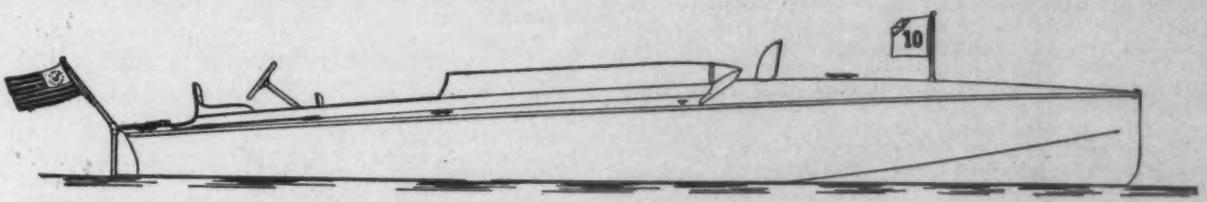
A limited number of special 26-foot boats built of mahogany and powered with 6-cylinder 100-H.P. special Van Blerck motors are offered. The price is as reasonable as full attention to detail will allow.

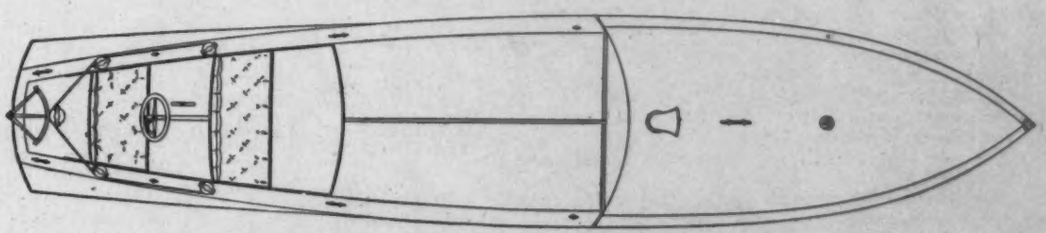
The guaranteed speed is 35 miles per hour.

WECKLER quality is established. We will build you a good boat completely equipped and furnished at a fair price to you and to ourselves. WECKLER boats are not cheap boats. Our workmen and materials are the best the market affords. Our prices allow building a boat that you will take pride in owning.

The WECKLER shops are at present filled to capacity on cruisers. Two 100-foot scows and a tug are building in the WECKLER yard. We cannot accept new orders, other than hydroplane work, for delivery earlier than September. A new brick building assures delivery of hydroplanes when promised.

If you are interested in WECKLER-FAUBER HYDROPLANES we will send full information.





WECKLER BOAT COMPANY

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West Hudson Yacht Club

The West Hudson Yacht Club, which was incorporated this year, held its annual election Thursday, January 18, at Kearny, N. J., and chose the following officers:

Commodore, Mr. David Gillow; Vice-Commodore, T. N. McNish; Financial Secretary, S. T. Hard; Recording Secretary, C. W. Dukes; Treasurer, F. A. Clark; Measurer, R. S. Young; Fleet Captain, J. Griffin; Sergeant-at-Arms, E. Rue.

Board of Directors, including the officers and the following members: W. Rue, J. Williams, G. Taite, J. P. Hamilton, Jr.

To Revive One-Design Sailing on the St. Lawrence

A class of small one-design sail boats has been formed, to revive interest in boat sailing on the St. Lawrence River, and already 20 of these boats have been ordered and are being built at Ogdensburg.

Of late years sailboats have almost entirely disappeared from this part of the St. Lawrence, and, except for an occasional sailing canoe or sailing skiff, no spreads of canvas were to be seen. The motorboat has had full sway. This was due in a large measure to the members of the several clubs on the river having one-design motorboats.

Members of the same yacht clubs are now turning their attention to sailing to break the monotony. A committee was appointed to devise a plan, and it was decided to place an order for twenty one-design sailboats and offer them by subscription to the members of the river clubs. Plans for the boats were drawn by William Gardner and they are similar to the boats used in the Larchmont and Great South Bay regattas. The dimensions are 26.4 over all, deck beam 6.6 feet, with a sail area of 300 square feet. The boats are non-capsizable and non-sinkable.

These boats are now being offered by subscription to the members of the Chippewa, Thousand Island, Frontenac and Gananoque Yacht clubs, and most of them have already been subscribed for, the price stated being $450 each.

Wm. J. Gunnell to Head Motor Boat Club of Buffalo

Plowing sturdily up the Niagara River, in the teeth of a 50-mile northeaster, last December, could be seen a 40-ft. cabin cruiser. She was in shape for bad weather, and the only person in view was the helmsman, who was holding her steady against wind and current. The sleet and snow drove in steady sheets, and regularly as the tight little craft poked her nose in the brine, huge combers would come plunging over decks. The weather bothered the man not at all, as he had a definite purpose in mind, and all things not pertaining thereto were of no consequence. They were simply part of the game. Mile after mile was logged off, till the harbor lights showed over the quarter, and with an easy swing to port, the craft was headed toward the entrance.

This introduction to Wm. J. Gunnell, recently elected commodore of the Motor Boat Club of Buffalo, is typical of the man, who is best known and loved by club members as Skipper Gunnell, of the Arcady. The Motor Boat Club of Buffalo will be piloted this season by the Arcady whose only purpose will be to bring the club safely through to the harbor of prosperity.

Long Distance Race of the Tappan Zee Yacht Club

A handsome cup has been donated by Mr. Wm. C. Disbrow, of the Tappan Zee Yacht Club, to be known as the Disbrow Cup, to be competed for on June 22d and 23d, in a race for cabin cruisers 45 feet overall and under. The start will be from the club anchorage, off Grand View, N. Y., to and around a mark off Hudson, N. Y., and return, a distance of 180 miles.

As this cup is given to stimulate the interest of owners of cruising boats in long distance racing, as few restrictions as possible have been imposed. The race is to be governed by the rules of the A. P. B. A., under the following conditions.

The race to be under the management and control of the Regatta Committee of the Tappan Zee Yacht Club.

Start to be at 3.30 p.m. on Saturday, June 22, 1912, and all boats must finish inside time limit of 27 hours.

Entries will be received from owners who are members of any recognized Eastern yacht club.

By cruising cabin boats 45 foot overall and under, it is understood to mean boats with permanent cabins with full cruising accommodations, as berths, toilet, cooking and living facilities.

All converted auto boats or boats which without cabins would come in the auto class, will be barred.

Owners of boats entered must be aboard during the entire race, but professional crews will not be barred.

In addition to the Disbrow Cup the Tappan Zee Yacht Club will offer a cup for the boat finishing second, and suitable medals to the next four boats finishing according to corrected time.

Entries must be in the hands of the regatta committee with signed certificate of measurement not later than Saturday, June 15, 1912.

This race should be of particular interest to members of the Hudson River Yacht Racing Association, and they will be well represented in the race.

Entry blanks can be had by addressing Regatta Committee, Tappan Zee Y. C., Worthington Scott, Chairman.

Mosquito Fleet Yacht Club

The Mosquito Fleet Yacht Club, at the annual meeting, elected officers as follows for 1912:

Commodore, Thomas J. Kelley; Vice-Commodore, Edward L. Hopkins; Secretary, Richard S. Landers; Treasurer, Cornelius J. Driscoll; Measurer, Edward T. Landers; Directors, James H. White, Henry J. Lannon, Richard F. Quirk.

The Compass—The Official Newsbag of the Rochester Yacht Club

The Rochester Yacht Club has recently launched a little magazine that will prove of great interest to its members. It is known as the "Compass," and the first number appeared in February, and was full of interesting items in regard to the club and its members. We wish the new craft success. The following are the officers of the club for 1912:

Commodore, Dr. Charles R. Pullen; Vice-Commodore, William L. Glen; Fleet Captain, Dr. William F. Plumley; Treasurer, George V. Fleckenstein; Secretary, Clute E. Noxon; Measurer, Charles J. Pembroke; Fleet Surgeon, Dr. Henry T. Williams.

Hollis Burgess Recovers

Friends of Hollis Burgess, the well-known yachtsman and yacht broker, of Boston, will be pleased to hear that he has fully recovered from a severe attack of typhoid, which has kept him housed for over two months. During his illness Mr. Burgess was honored by an honorary membership to the Mosquito Fleet Yacht Club, through action taken at its annual meeting, and also by election to a similar membership in the Inter-Club Yacht Racing Association of Massachusetts.

Philadelphia Yacht Club's Officers for 1912

The annual election of the Philadelphia Yacht Club was a particularly pleasant affair, as it not only helped to usher in the new officers for the year, but was the occasion of the presentation of a token of appreciation to former Commodore Barth, who had handled the affairs of the club so well during the past year.

The new officers elected are: Commodore, John H. Bromley; Vice-Commodore, Philip H. Johnson; Rear-Commodore, Bernard Bloch; Recording Secretary, S. W. Bookhammer; Financial Secretary, C. Carroll Cook; Measurer, Alex. G. Rea; Fleet Surgeon, Dr. Fred J. Haerer; Harbor Master, George F. Schilling; Trustees, William A. Christy, A. L. English, Joseph Price, George W. Fite, Walter N. Stevenson, S. B. S. Barth, Robert J. Williams; Race Committee, John McAvoy, Thomas W. Boyd, Otto R. Heiligman.

Officers of Piermont Boat Club

At their last monthly meeting the Piermont Boat Club elected the following members as officers for the coming year: Commodore, Hugh Rutter; Vice-Commodore, Howard Aspinwall; Secretary, Charles B. Longyear; Treasurer, Gale Spaulding; Chairman of House Committee, Harry A. Rodger.

East Greenwich Yacht Club

The following officers of the East Greenwich (R. I.) Yacht Club for 1912 were elected at the last annual meeting:

Commodore, F. Herbert Smith; Vice-Commodore, Dr. William H. Heald; Rear-Commodore, Henry E. Allen; Secretary, F. S. Nock; Treasurer, L. W. Dugdale; Fleet Captain, M. A. Newcomb; Fleet Surgeon, Dr. F. G. Taggart; Measurer, F. S. Nock; Asst. Measurer, G. L. Spencer.

House Committee: A. P. McCabe, Chairman; A. E. Leu, R. V. S. Read, Wm. Nason, W. A. Congdon.

Racing Committee: F. S. Nock, Chairman; Walter Sherwood, T. Drew Dunnell, Wm. Nason, C. H. Mandeville.

Representatives to Narragansett Bay Yacht Racing Association: F. S. Nock, Wm. Nason, C. H. Mandeville.

Officers of Hudson River Yacht Racing Ass'n for 1912

President, Ernest W. Marshall (Yonkers); Vice-President (assistant to the president), W. H. Frank (Poughkeepsie); Vice-President (racing), Dr. R. B. Greene (Tarrytown Y. C.); Vice-President (fleet), Chas. F. Chapman (N. Y. M. B. C.); Secretary, Joseph H. Acker (Tarrytown Y. C.); Treasurer, James Bedell (Shattemuc); Measurer, Chas. O. Gunther (Tappan Zee).

Committees—Classification: Worthington Scott (Tappan Zee); Chas. F. Chapman (N. Y. M. B. C.).

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NOTE: Don't forget in an emergency, the old style Binding Post Cell may be used in any **Patterson Battery Set.**

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Dixie, Jr., on her trial spin, doing better than 35 miles an hour. Notice how smoothly she seems to travel.

The regatta committee will meet some time in March to consider several important events, chief among which will be the holding of a speed boat relay race from the Battery to Albany and back to New York, carrying a letter from Mayor Gaynor to Governor Dix and bringing back his answer. To give everybody a chance it is suggested that trial elimination races be held among the various club boats and the fastest in each club have the honor of carrying the message for that club. One relay will probably be from the Battery to Tarrytown Light, where another boat will take the message farther up the river, and so on until Albany is reached, the return trip being made in reverse order.

A Concise and Comprehensive Gas Engine Handbook

A new gas engine handbook has just made its appearance, which will prove of great value to motorboat owners, as it fills a long-felt want for a handbook that gives all the information necessary, without a lot that is irrelevant.

The title of this book is "The Gasolene Engine, its Construction, Operation and Care," and it is written by H. J. Diefendorf, sales manager of the Gray Motor Co., of Detroit, Mich. It contains a description of the principle of the two- and four-cycle motors, explains the theory of the carburetor and all phases of ignition, and has chapters on wiring, water-cooling, installation, etc. One feature of the book is that practically every subject is covered by clear and comprehensive cuts, as well as by the description, so that there is absolutely no chance for the novice to misunderstand any part of it. It is a book that every boat owner will find occasion to use many times during the summer if it is on his boat. Mr. Diefendorf has approached his subject in a way that will be appreciated by all boat owners. It is published by the Gray Motor Co., of Detroit, Mich.

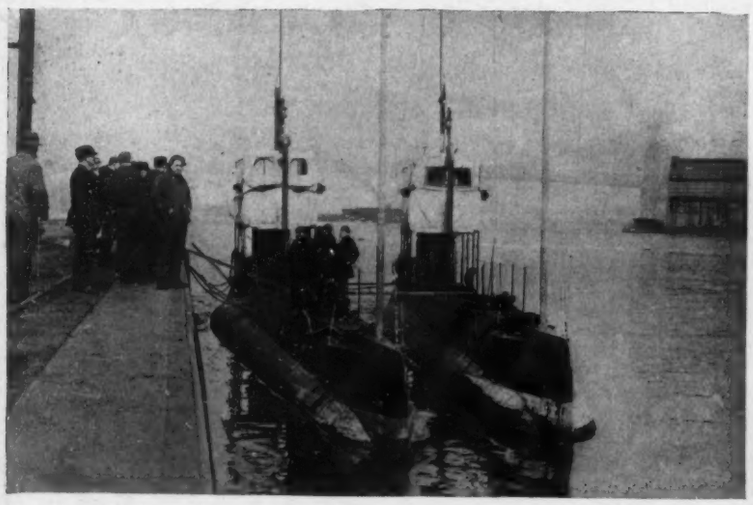
An American-Built Heavy Oil Engine

In the Elco space at the New York Show was exhibited a 150-H.P. 6-cylinder American-Nürnberg heavy oil engine that attracted great interest. This was built by the New London Ship & Engine Co., of Groton, Conn., who have the exclusive American rights to the heavy oil marine engines developed by the Maschinenfabrik Augsburg-Nürnberg A. G. of Germany. This engine is of the Diesel 2-cycle type. There are now building in Germany engines of this type in 12,000 HP. units for battleships and commercial vessels.

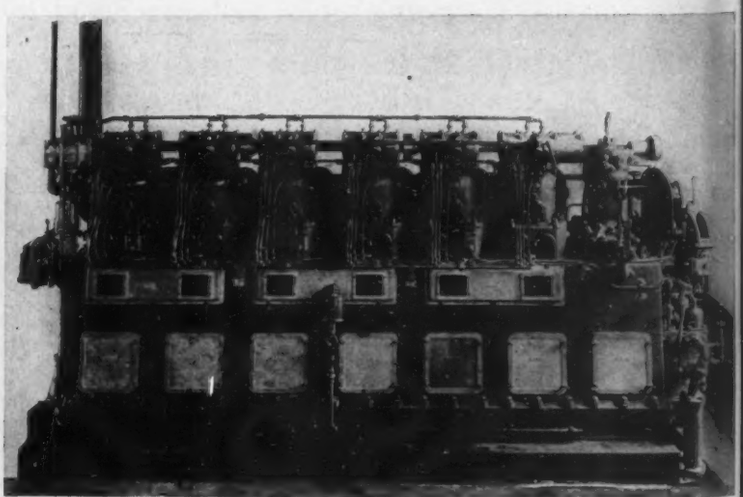
The New London Ship and Engine Co. have now under construction at their works in Groton, 34 engines of this type, varying from 150 to 500 H.P. They have been adopted by the United States Government for the submarine torpedo boats and a number are being built for commercial service. Two of the first torpedo boats equipped with these motors are shown in the photograph herewith.

The advantage of the heavy oil engine over gasolene, for yacht service, is the ultimate economy in the cost of fuel, which is an important item in the larger yachts. For example, the cost of operation per hour of a 100-H.P. gasolene engine with gasolene at 12c. per gallon is $1.50, while the cost of operation of a 100-H.P. American-Nürnberg oil engine with crude oil at 3c. a gallon is 20c. per hour, or a saving of $1.30 per hour. Repairs and depreciation are also lower than with the steam plant, while the room taken up by the oil engine is considerably less, thereby leaving more space for the owner's quarters on a yacht or for cargo in a commercial vessel.

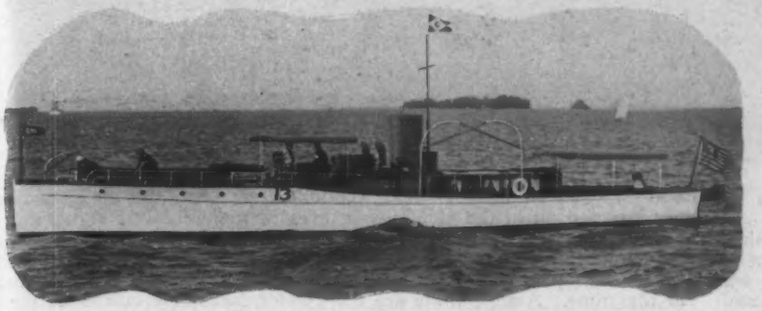
The engine exhibited at the Show was a 6-cyl, single-acting machine working on the 2-cycle principle, with combustion of the liquid fuel under constant pressure. On the up-stroke of the piston pure air is compressed in the working cylinder to a high pressure, thereby becoming heated to a temperature above the flash point of the fuel oil. Shortly before the end of the up-stroke a spray valve opens and fuel oil is, for a short time at the beginning of the down-stroke, delivered into the cylinder and begins to burn immediately. This down-stroke is therefore the real working stroke. During the first part of it combustion under constant pressure takes place, while afterwards the products of the combustion work by expansion. At the end of the working stroke the burned gases are exhausted through ports uncovered by the piston, and by novel arrangements the cylinders are scavenged and filled with pure air, which is then again compressed and the cycle repeated. The 2-cycle operation and high mean pressure give a large power output per unit of cylinder volume, and in consequence the space occupied by the engine and its weight are both small. The engine is steady and smooth running and will operate satisfactorily even under light load at slow speed. In the 150-H.P. engine this power is developed at 450 revolutions.



Two navy submarines equipped with new American-built Diesel type oil engines.



150 H.P. six-cylinder American Nuremburg Diesel type engines with which the navy submarines are equipped.



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The best that money can buy

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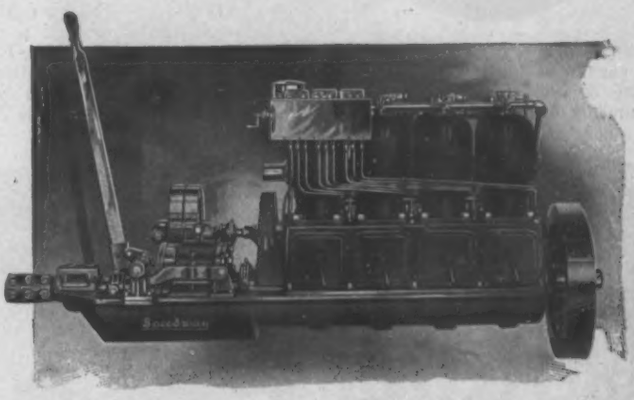

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USE 3 IN ONE OIL

No other oil can take its place on yacht or motor boat. No other oil is half so good for keeping everything bright, shiny and in perfect ship shape.

3 in One makes brass parts and trimmings shine like new because 3 in One overcomes the tarnishing, corroding, aging action of salt water and sea air. 3 in One cleans and preserves woodwork, removing the spots, scars and stains of years from varnished surfaces.

Electrical Machinery, tools, gun locks and gun barrels all need 3 in One. It lubricates perfectly and prevents rust in any climate—on any water. Just a few drops on your strop and razor makes shaving easy. It preserves your strop, your razor and your face.

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8 SIZES 11 STYLES

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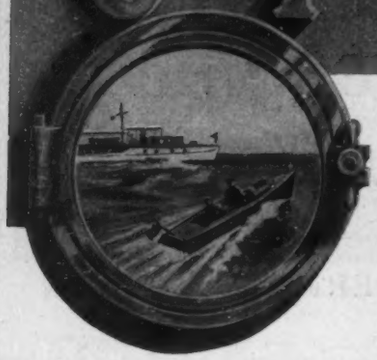
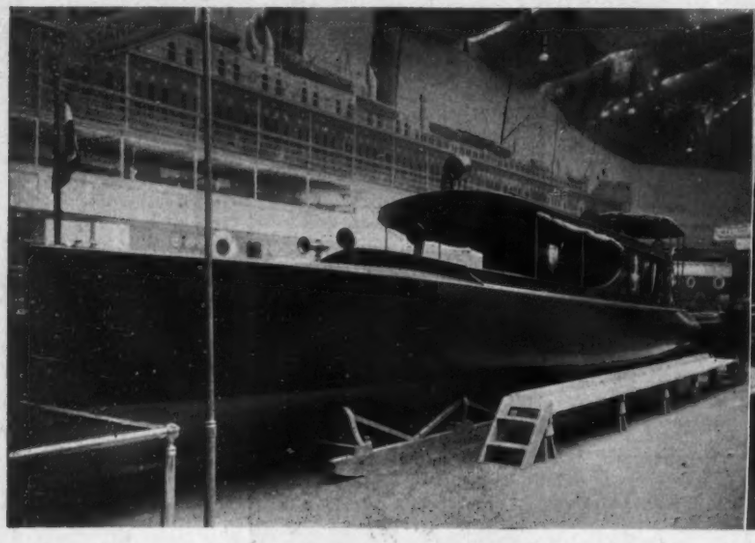


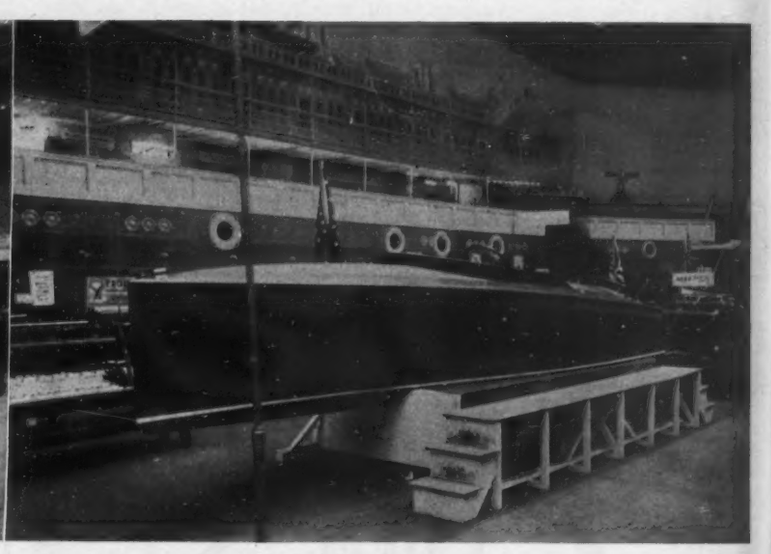
A Great Show at the Garden

The 1912 Motor Boat Show at the Garden, both in point of exhibits and in attendance, was the best that has been held anywhere. To show the interest that this exhibition aroused it may be pertinent to cite that the attendance during the seven days of the Show was 88,381, or an average of 12,626 a day. The 1911 Show, which ran ten days, had a daily attendance of only 9,084. This is particularly gratifying, as this is the first year that the Show has been run by the National Association of Engine & Boat Manufacturers, and reflects great credit on the Show Committee of this Association. In point of decorations also this Show was 'way ahead of any other exhibition ever held in Madison Square Garden, and all of the exhibitors expressed themselves as highly gratified at the way things were managed.

Though we covered the Show fully in our last issue, we reproduce here a few photographs of interesting exhibits that were not obtainable at that time. Among these are the 53-foot mahogany cruiser of the Gas Engine & Power Co. and the 40-foot mahogany cabin runabout of the Reliance Motor Boat Co.; the Dixie Junior, the 35-mile hydroplane of Tams, Lemoine & Crane, which was seen for the first time at the Show, a 30-foot runabout of the Geo. Lawley & Son Corporation, who made an exhibit at the New York Show for the first time, and the American-Nürnberg heavy oil engines.

After showing what can be done in the way of exhibitions, it is evident that the National Association of Engine & Boat Manufacturers will find it necessary to manage all future shows held in New York, and a movement is also under way to have this Association manage a Chicago Motor Boat Show next season.





SOME OF THE BOATS SEEN AT THE NEW YORK MOTOR BOAT SHOW

Peter Pan, Sr., the Reliance Motor Boat Co.'s 40-foot mahogany cabin runabout.

Gas Engine & Power Co. and C. L. Seabury Company's 53-foot, 24-mile, day cruiser.

Dixie, Jr., the 35-mile hydroplane designed by Tams, Lemoine & Crane.

Control bulkhead of the 53-foot cruiser of the Gas Engine & Power and C. L. Seabury Company.

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Your Private Monogram or Colors, or your Club Insignia is the proper decoration for your boat's China and Glassware

This attractive method of securing striking distinction for your boat's equipment below deck has become a *custom* among yachtsmen today.

Our special Yacht Department has at its command, on the premises, the most completely appointed Decorating Studios in the country. We will originate a design or, when desired, develop one from the yacht owner's ideas—and execute the work in a manner that gives the utmost satisfaction—and *at the lowest prices* obtainable anywhere for first-class work.

We will gladly submit a specimen Plate or Goblet decorated with any design together with estimate—*free of charge* and *without obligating you in the least to buy.*

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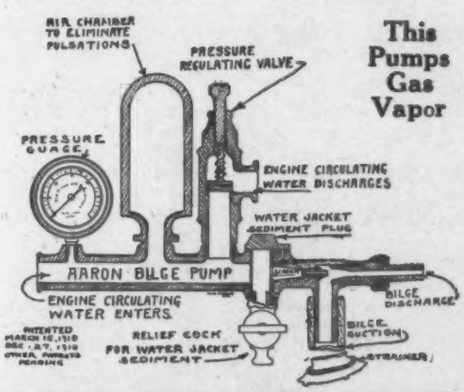

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Draws out anything in a liquid form; its greatest asset is its factor of safety. Positively preventing all danger of EXPLOSION of fire by drawing all gasoline fumes from bilge. This fact alone cannot be determined from a money value. No more pumping dirty bilge water through the water jacket when using this pump. Full information and prices submitted upon application.

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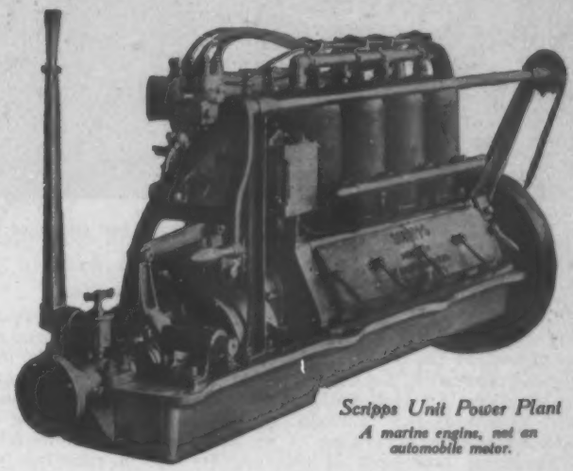
"The Motor that REALLY DID master Niagara"



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A marine engine, not an automobile motor.

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1. The Scripps is a motor of sturdy construction, that will stand up under the strain of marine service.
2. The finest example of the four-cycle type of engine, with every detail refined and perfected.
3. A complete unit power plant—ready to install in your boat and give service at once, without the purchase of numerous extras.
4. Scripps Motors have made wonderful records in all parts of the world, winning medals and diplomas in principal European expositions.
5. Capt. Klaus Larsen went through Niagara Whirlpool and Rapids in his 15-foot power boat, driven by a Scripps.
6. Made a perfect record in the recent Scripps Reliability Cruise.

Write for catalog describing our entire line of motors, from one to six cylinders, 4 to 100 H. P.

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Scripps Motors carried in stock in New York by BOWLER, HOLMES & HECKER, 147 Liberty St., New York City

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

Hermes, of Stockholm, Sweden, winner of Prize of Honor for best all-around showing. Equipped with 25 H.P. Buffalo engine.

A Buffalo Motor Winning Prizes in Sweden

It is always pleasing to note the use of American motors abroad, and doubly so when those same engines prove so satisfactory and efficient as to win prizes for the owners of the boats in which they are installed.

We publish herewith a photograph of the high-speed cruising boat Hermes, owned by Mr. Helmar Langborg, of Stockholm, Sweden, which is powered with a 25-H.P. Buffalo "auto-marine" engine. The boat in itself is rather unique by reason of its arrangement as compared with boats of the same type built in this country. In a race last summer from Karlskrona to Voxholm the Hermes gratified her owner by winning the Standard Prize of Honor for the best all-around boat among quite a representative fleet of Swedish craft.

A Lawley 30-Foot Runabout at the Show

One of the boats at the New York Show that caught the attention of the crowd by reason of her sleek black sides, white boot-top and fine finish, was the 30-foot runabout Magnet, exhibited for the first time at this Show by Geo. Lawley & Son Corporation, of Neponset, Mass. The boat was a beautifully modeled craft and the construction, material and workmanship was of the highest order. The engine, a 25-30-H.P. Sterling, was located just forward of amidships under a mahogany hatch, and forward of a control bulkhead. The cockpit was large and roomy and was fitted with wicker chairs, giving good seating capacity, while there was a broad lazy-back seat across the after end. She was an unusually able and seaworthy boat for one of this type.

The Geo. Lawley & Son Corporation has recently gone into the manufacture of gasolene motors and have designed and placed on the market a heavy-duty marine motor, adopting a type which is reliable, accessible and built of the best materials. This is made in 18-H.P. 2-cylinder, 36-H.P. 4-cylinder and 54-H.P. 6-cylinder sizes.

Metal Runabouts and Yacht Tenders

One of the interesting exhibits seen at the Show was that of the Hyde Metal Boat Co., of Watertown, N. Y., consisting of a number of metal launches, rowboats and tenders built on the Hyde system of construction. The shell is made up of four strips of metal running its entire length. These strips are in turn made of sheets 12 feet long and of proper width. After the strips have been cut to pattern they are rolled by a patented stretching process, so as to accurately conform to the shape desired.

The keel is made of oak set into a steel channel, giving the greatest possible strength for the weight. By means of a system of steel bulkheads and stringers the Hyde Company is able to make metal boats stronger than anything heretofore turned out. The engine-bed stringers, which are all of steel, extend practically the entire length of hull. On the outside of these stringers is placed a hardwood backing, held in place by bolts.

A 14-foot hydroplane equipped with new 6 H.P. Gray motor which makes 16 miles an hour.

Magnet, a 30-foot Lawley runabout seen at the New York Show.

The Hyde Company make stock runabouts suitable for any type of engine, in from 18 to 28 feet overall length. They also make knock-down hulls in which plates, braces, beams, etc., are all shaped and ready to put together with the exception of riveting and soldering, which work they claim can be done by the purchaser in a very short time.

A 14-Foot Gray Hydroplane

One of the little boats at the Show that was the center of an interested crowd of speed bugs was a little 14-foot hydroplane equipped with a 2-cylinder new 6-H.P. Gray motor, which showed a speed with this small outfit of 16 to 17 miles an hour over a measured course. This boat was designed by Mr. John Hacker, of Detroit, the designer of such famous speed boats as Kitty Hawk, Gretchen II, and others. This little hydroplane had very graceful and snappy lines, and at the same time was designed to sell, complete, at a popular price. Although the boat was only finished this winter, just before the Show opened, and it was not the best time of the year for motorboating, the little craft was given a thorough tryout in Water Works Park, in Detroit, where there is a slip back of the power house which never freezes. The picture which we publish shows her making her trials over this course.

Another novelty which the Gray Motor Co. had at the Show was a large sectional drawing which received considerable favorable comment. This drawing was one of the Gray motors painted in black and red, and with each individual part of the motor labeled so as to be easily read. This drawing was 10 x 10 feet, showing a gray and black engine with red arrows and lettering. Some of the principal features in connection with the Gray motor which this diagram clearly showed were the following:

Cylinder Head Cap.—Heavily enameled, neat in appearance and easily removed to get at engine cylinder head. Water Jacket.—Liberal areas provided in all water jackets to keep engine from running hot. Water-Jacketed Exhaust Manifold.—Model "T" exhaust manifolds, all water-jacketed. No danger of burning occupants of boat. Exhaust Port.—Specially designed to give quick clearance of exhaust gas. Third Port.—Open and closed by piston, giving added power at high speed. Manifold Clamp and Stud.—Provides accessibility. Manifolds can be removed in

Sectional drawing of Gray motor seen at the Show.

It Gets Under the Bilge Boards

That's one reason why PYRENE is the most efficient extinguisher of motor boat fires. It is especially designed for the inaccessible flames. It **ferrets** them out, **lifts them** from the burning substance—then it **smothers** them.

PYRENE is non-damaging and non-corrosive.

PYRENE is the only effective extinguisher on fires in highly inflammable material—particularly oil, gasoline, alcohol and calcium carbide (acetylene gas).

PYRENE does not freeze at sixty degrees F. below zero, and is good until used, because it does not deteriorate. Neither does it evaporate, being enclosed in a sealed cylinder.

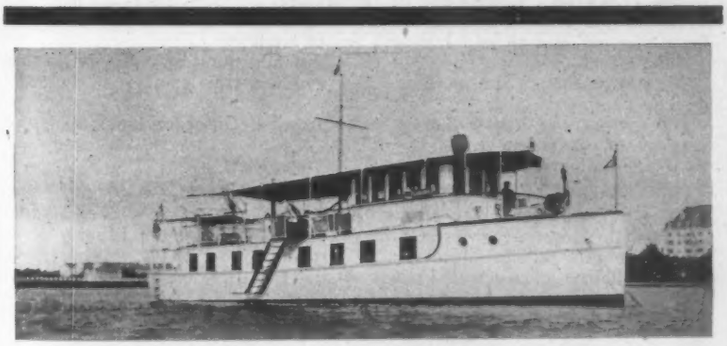
The **PYRENE EXTINGUISHER** may be refilled as readily as a kerosene lamp. It is small and handsomely finished and should be placed at some convenient point on your boat where it will be instantly available for use.

Cost: $6 in enamel; $7 in solid brass; $8, full nickel plated.

INCLUDED IN THE LISTS OF APPROVED FIRE APPLIANCES ISSUED BY THE NATIONAL BOARD OF FIRE UNDERWRITERS.
APPROVED BY THE UNITED STATES STEAMBOAT INSPECTION SERVICE.

WRITE FOR OUR BOOKLET. ADDRESS DEPT. R.

PYRENE MFG. CO., 1358 Broadway, New York



Among the Five Sturdy Mathis-built Houseboats Now in Florida Waters

is the **LANAI**—the 70-footer with a 16-foot beam and 27-inch draught, which made so wonderful a maiden trip down the ice-filled Delaware and by open sea to Norfolk.

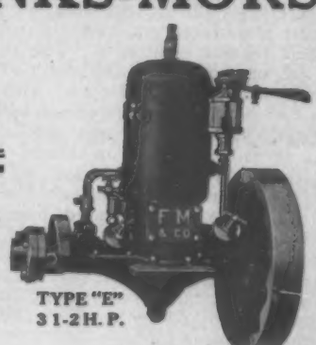
Reaching its destination in perfect shape, it has been a revelation to its owner in comfort and ability to go anywhere, as well as in sturdiness. "Entirely satisfactory"—because satisfaction is built into Mathis-built boats; by the master workman of our shipyard of long and favorable reputation.

If you want the advantages of our establishment—as noted for its thoroughness as for its large purchasing capacity and elimination of slack seasons—consult us before you build.

Shall we submit the evidence for your consideration?

MATHIS YACHT BUILDING COMPANY
Specialists in 60 to 120-ft Cruisers and Houseboats
Front and Erie Streets Camden, N. J.

FAIRBANKS-MORSE MARINE ENGINES



TYPE "E"
3 1-2 H. P.

Engines that anyone can start and handle; for every service; two and four cycle; 3 1-2 to 40 H. P.

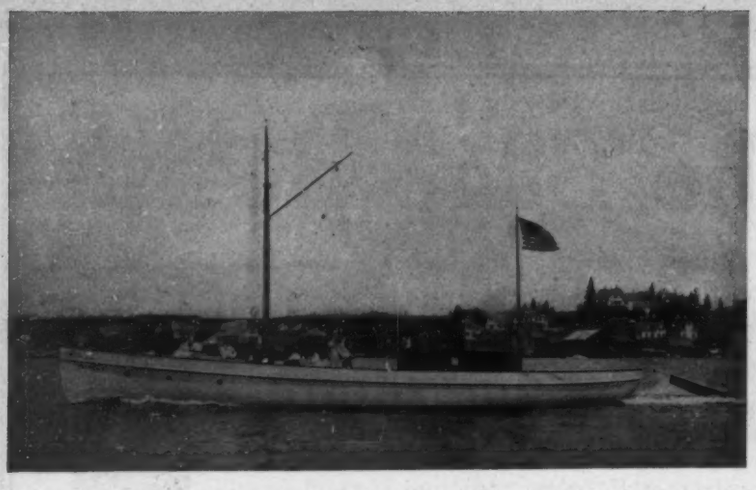
Absolutely Guaranteed

Over 120,000 Fairbanks-Morse Engines, many of them over 20 years' old, are in service to-day. Isn't this in itself a sufficient guarantee of their quality? Let us tell you about their distinctive features. They are the most reasonably priced—Fairbanks-Morse Quality considered—on the market to-day.

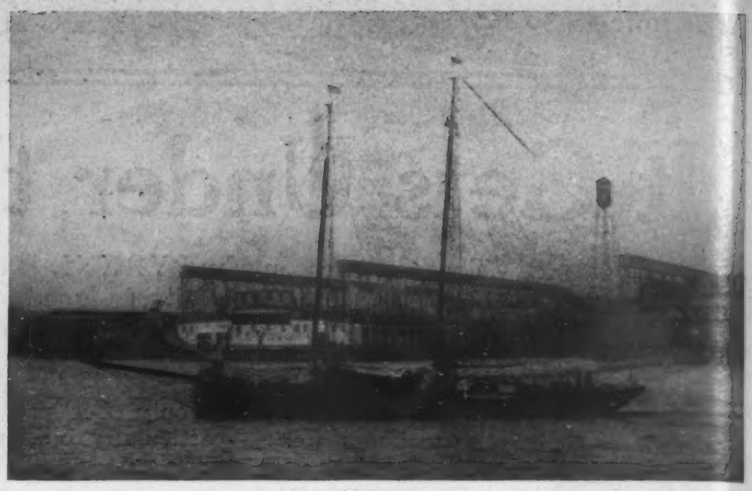
Prompt Shipment Send for copy of Catalog No. 1316PF and list of our Branch Houses where our engines are carried in stock.

Fairbanks, Morse & Co.
900 SO. WABASH AVE. CHICAGO, ILL.
The Canadian Fairbanks-Morse Co., Limited, Montreal, Sole Agents for Canada

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.



Trident, a gasolene fishing boat used on the coast of Maine. Equipped with 60 H.P. Sterling engine.



Gloucester fishing schooner Alvah Spurling in winter rig. Equipped with 60 H.P. Sterling engine.

a minute. Second Port.—Controlled by valve, makes an easy starting engine, gives good control at slow speed. Oil Reservoir, collecting surplus oil that can be drained off when desired. Water-Jacketed Cylinder Head.—A little more expensive than ordinary construction, but prevents pre-ignition. Transfer Port.—Gas travels from base through transfer port to combustion chamber. By-Pass Plate.—Absolutely preventing back firing. Oil Ducts.—Leading oil globules to proper bearings.

The Gray catalog for 1912 is just out and is a very compact and comprehensive description of the Gray motors. Beginning with the description of the equipment and facilities of the Gray factory, it takes up in order all of the different engines according to size, starting with the smallest and describing the entire line. Between the description of the different motors are talks on quality, power, economy, long life, lubrication, etc. At the back of the book some pages are devoted to accessories, while the balance of the catalog contains a valuable feature which the Gray Motor Co. have incorporated in their catalog for a number of years—that is the department of Questions and Answers. In this are printed the replies to many questions which are promptly answered in the man's correspondence prior to buying a Gray motor.

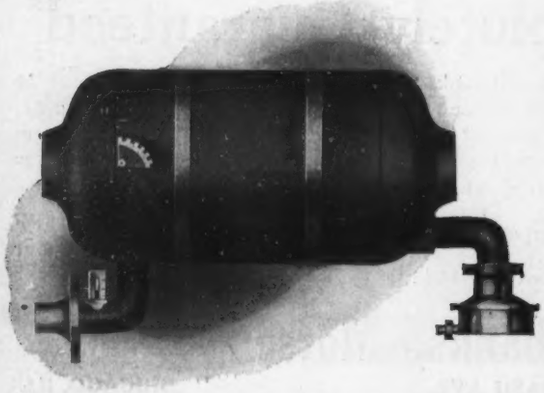
A New Kerosene Gas Producer

The Kerosene Gas Producer Co., of 1926 Broadway, New York, exhibited at the Show some of their new kerosene gas producers. These were shown attached in working order to Loew-Victor engines, and in design and construction seemed to bear out the statement of the manufacturers that they are a scientific success. This producer has been under severe tests during the past six months in the plants of several large engine manufacturers, and a number of these are adopting it as a part of their regular equipment. The advantages of using kerosene over gasolene are manifest, and the claim is made that this attachment will save 50 per cent in fuel bills and with less danger and no smoke and smell. It can be used in connection with any gasolene motor.

Technically the kerosene gas producer may be called a suction gas producer. It is cylindrical in shape, closely resembling the ordinary muffler. Its length varies from 11½ to 26 inches over all, and its diameter from 5 to 8 inches on various horsepowers from 2½ to 100. The weight is hardly to be considered, being only from 20 to 50 pounds for the smaller and larger sizes.

The producer is attached to the exhaust manifold of the engine in the same manner as a muffler, and as close to the cylinders as the construction of the engine will allow, but does not take the place of the muffler, as this also should be used, though it is not necessary to the operation of the producer.

The kerosene is vaporized by passing through a specially designed mixing valve which is mounted on the under side of the producer on the end farthest from the engine. This vapor is then drawn by the suction of the engine through a tortuous passage contained within the producer, the thin walls of which are surrounded by the hot exhaust or waste gases, which heat up the vapor to a point where it becomes a gas, and is then drawn through a flexible steel tube to the gasolene carburetor, where about four parts of air are added to the mixture, which is drawn in through the auxiliary air inlet and thence to the intake valves of the engine. The temperature of the gas is controlled by a thermostat, preventing overheating and formation of carbon.



New kerosene gas producer which may be attached to any gasolene engine, allowing it to run on kerosene.

Sterling Engines in the Fishing Industry

Internal combustion engines are rapidly replacing the steam engine in the coast fishing industry. Old skippers who a short time ago were wont to scoff at the power-driven schooner are now coming to look upon it as a necessity, if they would keep up with the times and share in the profits at the market.

One of the latest additions to the power-driven fleet is Trident, 80 feet long and 12½ feet beam, owned by the Neptune Packing Company, of Boothbay Harbor, Me. She is equipped with a 60-H.P. heavy-duty Sterling engine, and logs 12 miles an hour. She has a capacity of 250 bushels of fish. She daily supplies the factories at Boothbay Harbor with sardine herring, and since the power was installed has not missed a day. She logged 7,000 miles last season, and to show the great economy of the gas engine over the steam, her skipper announced that he had spent practically nothing for repairs.

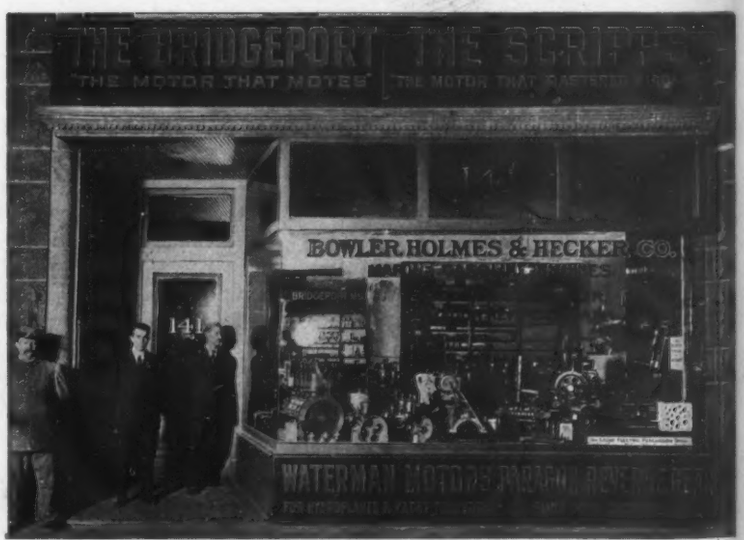
Another power fishing schooner is Alvah Spurling, owned by Capt. James H. O'Neil, sailing out of Gloucester, Mass. She is 80 feet long, 24 feet beam and 14 feet draft, and is equipped with a 60-H.P. heavy-duty Sterling engine and logs 7¼ knots an hour.

The Alvah Spurling is one of the latest additions to the New England Coast power fleet. She is what is known as a trawler and is engaged in halibut fishing.

Owing to the heavy increase of business, the Sterling Engine Co., of Buffalo, has been forced to put on two shifts of workmen in order to make deliveries on time.

Scripps Secures New Agency in New York

The Scripps Motor Co., of Detroit, Mich., have recently made arrangements with Messrs. Bowler, Holmes & Hecker Co., of 141 Liberty Street, to handle the Scripps motors, and in future New York purchasers can find a full line at this well-known shop. This firm report that they have recently sold a Model H, 4-cylinder Scripps to Capt. Chas. T. Gordon, of the Moriches Life Saving Station, Eastport, Long Island. This adds



New York Agency of the Scripps Motor Co.

20 FT. SPECIAL

$275.00 A QUALITY BOAT *Fully Guaranteed*

UNUSUAL VALUE

Our 16 years' reputation as builders of *quality boats* and *engines* is behind this boat in every way.

We are simply making a leader of her, building several hundred, and selling at a *very close margin* 20 x 4½ with own fully guaranteed 4 H. P. engine. The best oak, white cedar, spruce, mahogany and cypress used in construction. Bronze rudder post, polished brass deck fittings, copper gasoline tank, etc., etc. **Immediate Deliveries.**

THIS BOAT BUILT AND SOLD ON THE USUAL BASIS WOULD COST YOU AT LEAST $425.00

Write for full details if you want an exceptional value.

We are offering a still bigger bargain in our 20-foot Fast Runabout, 8-10 H. P., double cylinder jump spark engine, for $375.00. Speed 12 miles an hour

BOOK DESCRIBING BOTH SENT FREE ON REQUEST

RICE BROTHERS COMPANY, (Dept. J.) **East Boothbay Maine, U. S. A.**

Four Car Owners in Every Five Use the Reliable *Stewart* Speedometer

An Absolute Necessity on Every Car

Tells you how fast you go—saves you from arrest and accidents; keeps track of your season mileage; helps you follow guide-book mileage when touring, saves you money on tire adjustments; checks your gasoline and oil supplies; helps you get maximum efficiency out of your car. Beautifully made; absolutely accurate; open dial, easily read; jewel bearings; positive odometer; unbreakable flexible shaft; drop forged swivel joint that will outwear the car.

Speedometer Guaranteed for Five Years

There is a quality reason back of the popularity of the *Stewart* Speedometer. There is quantity reason back of the price.

Send for new 1912 descriptive catalog; tells you why in our big factory we can make the best speedometer at the lowest price. **Write Today.**

Stewart Speedometers have 100,000-mile season odometer, 100-mile trip register, can be reset to any tenth of a mile.

Speedometers, $15 to $30
Clock Combinations $45 to $70

Stewart & Clark Manufacturing Co.

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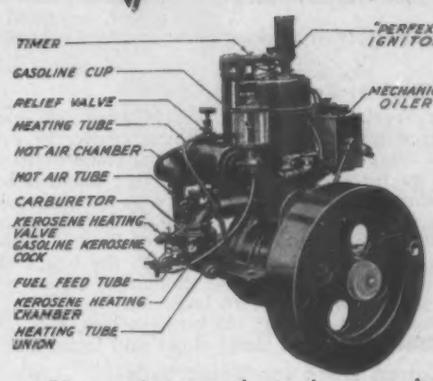
Detroit Chicago San Francisco New York Cleveland Boston Philadelphia Kansas City Los Angeles Minneapolis Indianapolis London Paris

Fitting Out Time IS KNOX Time

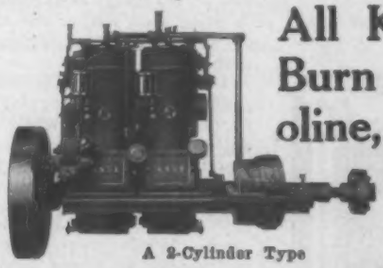


The Famous *Sea Bird's* Little 3-H.P. KNOX MOTOR

If your last year's engine wasn't satisfactory, or for any reason you're going to get a new one for 1912, you ought to know right now about

KNOX Motors

They're good enough and reliable enough for 3 men to trust their lives to (the little 3-H.P. Knox used on the **Sea Bird**), and they're big enough for any one satisfied with 40 H.P.



A 2-Cylinder Type

All Knox Motors Burn *Either* Gasoline, Kerosene or Distillate Alcohol

Knox Motors Are Fully Guaranteed

No other Motors have met the tests they have for

Durability, Reliability & Power

The upkeep cost on the Knox is so low it really means they are the cheapest Motor to buy and also the Highest Grade. The quality is there.

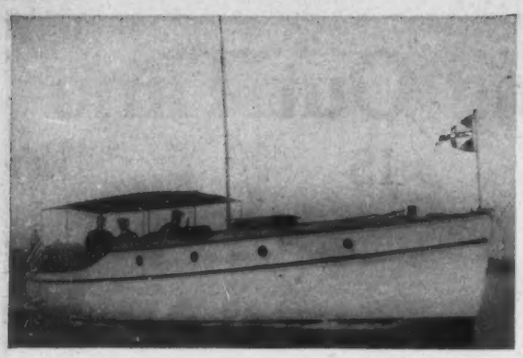
Full details on request

Camden Anchor-Rockland Machine Co.

Camden, Maine, P. O. Box "A-A"

AGENCIES

292 Franklin St., Boston, Mass. **436 W. Conway St., Baltimore, Md.**
Prince William St., St. John, N. B. **636 King St., Charleston, S. C.**



31-foot cruiser of the Milton Boat Works.

another to the many Scripps motors already in use in different departments of the United States Government Service.

Scripps motors have long been known as a standard of efficiency and reliability. They are 4-cycle motors, with L type cylinders cast separately, mechanically operated valves, all on one side of motor, operated by one cam shaft, thus reducing number of working parts and tending toward simplicity.

A Real 31-Foot Cruiser

The Milton Point Boat Works, Rye, N. Y., are building for immediate delivery a 31-foot stock boat that is a real little cruiser in every sense of the word, and has more room in her than most boats of 10 feet more length. This boat is 31 feet long over all by 8 feet beam, is built of oak and cedar, with mahogany trim. Every inch of room is used to advantage, though there is no attempt to crowd too much into a small boat. She is able and seaworthy and can stay out and "take punishment" when necessary. The cockpit is large, extending out to the boat's side, and is self bailing, with water-tight floor. The combined engine-room and galley contains motor, stove, sink and extra large icebox. The cabin has two transoms long enough for sleeping, lockers, shelves, etc. Forward of the cabin is the toilet-room, with water-closet and lockers.

A New Cotton Duck for Yacht Sails

Wilson & Silsby, of Rowe's Wharf, Boston, Mass., are calling attention to the fact that they have made arrangements with the Lowell Weaving Co. for a new line of yacht duck made of the finest combed Egyptian cotton, and constructed especially for yacht use. This arrangement enables Wilson & Silsby to give yacht owners an absolutely perfect cotton, and with the well-known reputation of this firm for first-class cut and workmanship the 1912 sails made by Wilson and Silsby should be a revelation in the way of fit, looks and life.

To show the demand for American-made sails in foreign countries, Wilson & Silsby are constantly receiving orders from Norway, Sweden, Russia and England for use on both racing and cruising yachts.

Waltham Box Chronometers and Timepieces

The matter of getting a proper chronometer for use on cruising motor boats and yachts by those who may want to go offshore or take runs along the coast is quite an important one. Heretofore the cost of a reliable chronometer has been prohibitive for the man who only uses it occasionally, the price running well into the hundreds; but the Waltham Watch Co. have recently placed on the market an eight-day box chronometer that is absolutely reliable and sells at a price well within the means of the average cruising yachtsman.

Waltham 8-day box chronometer.

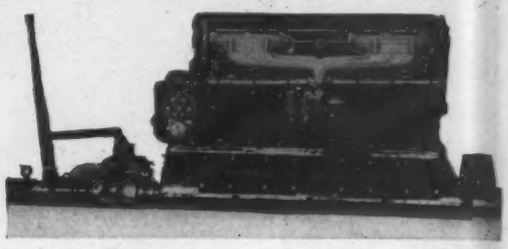
This chronometer is hung in gimbals, as is the regular ship chronometer, and while considerably smaller than the standard chronometer, it is equally accurate and has the advantage of being an eight-day lever-escapement instrument. While it may and should be wound at stated times, it can go on a full period without changing its rate, and has a smaller dial on its face, which shows the number of days since its winding, and an indicator disc showing red when it is time to wind, making it practically impossible for one to forget it. It has 15 jewels, and is adjusted to temperature and isochronism, and it is carefully timed before being shipped from the factory. The whole movement is enclosed in a dust and weather-proof case with screw back and bezel. It sells for only $60.00.

In addition to this is an attractive dashboard timepiece, made especially for boat and automobile use. This is also an eight-day timepiece with a warning indicator signal. The inner case is so secured to the outer case that it cannot be taken out or stolen without the actual breaking of the casing.

The Waltham Watch Co., of Waltham, Mass., had a very attractive display at both of the Eastern motor boat shows, and the interest displayed shows that this company is filling a long-felt want in supplying the demand for accurate and reliable timepieces for boats, and for a dependable navigating instrument for large and small yachts.

The Reynolds Rotary Valve "Six"

The Reynolds Motor Co., of Detroit, Mich., manufacturers of a 4-cyl. rotary valve motor of 20 H.P., which they have been selling for over a year, have recently placed on the market a new rotary "six" which they rate at 30 H.P. at 650 R.P.M. and 45 H.P. at 1,000 R.P.M. This engine fills the want for a higher powered engine than their 20 H.P., which has proven so successful, and in building this new six the Reynolds Motor Co. has aimed to produce an ideal high-powered medium-duty engine.



New Reynolds 6-cyl. rotary valve motor.

A number of detail changes have been incorporated in this model, which have been found of distinct advantage. The vertical drive shaft, instead of being carried at the rear end of the cylinder casting, as in the "four," is brought up through a central dummy cylinder. At the upper end of this shaft is a helical gear, by which are actuated three gears each way, which serve to rotate the six valves on their seats. This central placing of the driving gear balances the drive and minimizes back lash. The design of the Reynolds "Six" has been so worked out that the motors can be delivered to run permanently in either direction as desired. This is of great advantage where it is planned to use two of these engines for twin-screw installations, as the propellers may be made to revolve in opposite directions. In order to secure thorough rigidity, the reverse gear in this model is carried in an integral extension of the crank case.

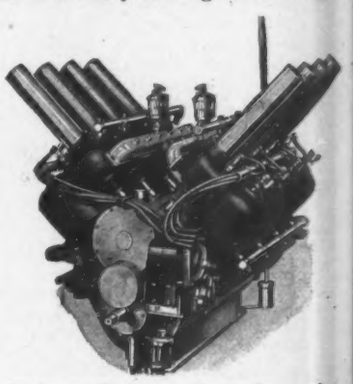
The 1912 Eagle Catalog

The 1912 catalog of the Eagle Co., 98 Warren Street, Newark, N. J., manufacturers of the Eagle engine, is now ready for distribution. This catalog is particularly attractive, and, in a way, is a new departure in marine engine catalogs. It is not only gotten up in very attractive style, but has the advantage of great simplicity in arrangement, which allows a customer to take in at a glance the specifications of the various engines, together with the equipment that goes with them, price, etc. In other words, he does not have to look on one page for a picture and general description of the engine, on another for the necessary specifications as to size, equipment and so forth, and on still another for prices —all this information being together. Another point that will be appreciated is the fact that the prices quoted in the Eagle catalog include full engine equipment, among which may be mentioned the Schebler Carburetor, Water-cooled Silencer (patented), Hyde Windlass Manganese Bronze Propeller, Bronze Stuffing Box, Dry Batteries, Coil, Complete Tool Kit, etc. There is but one price on all Eagle engines. This price includes all salt-water equipment.

The Eagle Co. make three distinct types of engines; a light, high-speed type, medium-speed type and heavy-duty type.

The Piston Valve in Trebert Motors

Mr. Trebert, the designer of the H. L. F. Trebert Engine Works, of Rochester, N. Y., has invented a new valve for 4-cycle motors which seems thoroughly practical. Actual tests in a heavy touring car and light racing boat have shown that this engine develops power in excess of the A.L.M. rating, and holds its compression indefinitely.



Trebert 8-V piston valve racing engine.

One valve performs the function of intake and exhaust from each cylinder. This valve is shaped like the piston of a cylinder, except that it has a solid base. Near the top and bottom are single compression rings. The valve merely slides up and down in a cylinder so that there is no possibility of carbonization around it. About the center of the valve, slots are cut through its cylindrical sleeves about the size of the intake opening to the main cylinders on either side of the valve cylinder. When the main piston is in the right

KYANIZE
SPAR FINISH

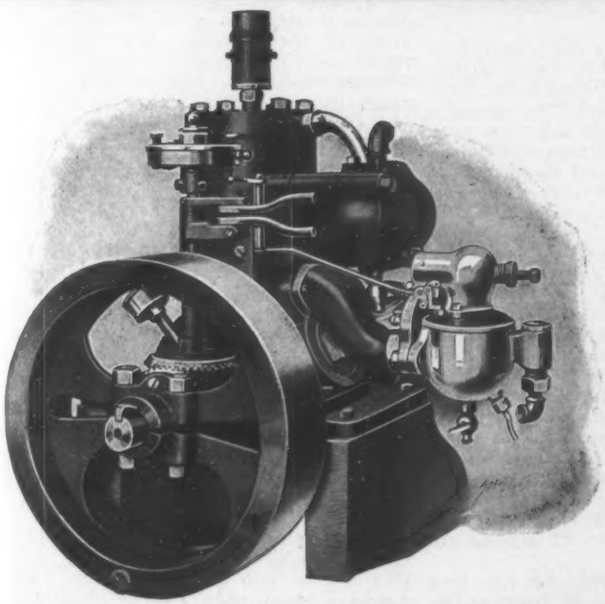
The most durable outside varnish in the world

Resists salt air—will not turn white.

Thousands of gallons used by United States Navy.

Half-pint sample FREE if you mention this magazine

Boston Varnish Company
Everett Station, Boston



EAGLE ENGINES

1, 2, 3, 4 Cylinders, Jump Spark or M. & B. Ignition. 18 models and sizes to choose from.

A 3 H.P. Complete Equipment, $70.00

AGENTS WANTED

THE EAGLE COMPANY, 98 Warren St., Newark, N. J.

The strongest and neatest rowlock made.

With All Your Strength. Never Fear, the ⚓ Drop Forged Rowlock Won't Break Nor Give!

It is drop forged in ***one piece from the solid bar.*** It cannot break, nor can it rust, because it is heavily galvanized to stay.

This Rowlock may cost you a few cents more than the ordinary kind, but it is worth twice as much and insures safety when pulling in a strong wind or heavy sea.

It Will Pay You to Insist on Getting the Genuine

Ask your dealer for ⚓ Anchors, Wheels, Deck Plates, Compasses, Rowlocks, Boat Nails, Hooks, Cable Chains, Lights, Lanterns, Pumps, in fact anything in the marine hardware line, up-to-date, dependable. If he doesn't carry our goods, write to us for nearest dealer who does. Booklet shows why ⚓ marine hardware and specialties are the standard of the world—backed by 65 years' experience.

Booklet tells why you should use ⚓ Marine Hardware and Specialties. Write for it now.

Free to Boat Owners

Our New Celluloid COURSE PROTRACTOR will be sent to Boat Owners or Yacht Club Members upon receipt of postal request.

WILCOX, CRITTENDEN & CO., Inc.
Largest Makers of Marine Hardware in the World
Established 1847 **MIDDLETOWN, CONN.**

position for a charge of gas to be admitted to the cylinder this valve lifts so that the slots across it are level with the intake on either side. The gas enters the engine across and through the cylindrical valve. The valve then drops a little, following the cam, and cuts off the intake and exhaust, allowing compression and firing. At the proper time the valve drops still lower, following the cam, and allows the exhaust to shoot over the top of the valve. It then raises, cutting off the exhaust, opens the intake and the process is repeated.

The advantages of this scheme are numerous. The valve is continually cooled by the intake gas, and can be but little heated from the exhaust, since it is below this heated gas. There is about 60 per cent less driving friction since there is only one valve per cylinder, and the springs do not need to be stiff, as all they have to do is hold the base of the valve stems on the cams. It is noiseless, for its action is like a sliding steam valve.

The engine is particularly adapted to high-speed work, since this valve allows a charge of gas to be taken in quickly and it does not heat as exhaust valves often do when the engines are run for long periods at their maximum speed.

The company has in stock an 8-V special racing engine that weighs 350 pounds, plus equipments. They intend to market a 4-cyl. 40-H.P. and a 6-cyl. 60-H.P. vertical type in the near future.

The H. L. F. Trebert Company will be pleased to send a circular of terms and prices and give any other information desired to readers of this magazine.

The Shaw Centripetal Propeller

Owners of power boats, especially speed enthusiasts, no doubt will be interested to know that the Shaw Propeller Company, 156 State Street, Boston, is putting on the market a propeller called The Shaw Centripetal Propeller, Patented. This propeller was invented by the late Henry F. Shaw, an inventor of world-wide reputation, and an expert on power and mechanics.

It is a known fact that many propellers heretofore used, if made to rotate above a certain velocity would break up the water and thus lose their hold upon the water and, consequently, their efficiency. The cause of this breaking up of the water is that the propeller's blades have usually been so shaped that when made to rotate with a velocity of rotation above a certain fixed rate they throw the water which is in their field of action outward, and break it up. Mr. Shaw claims that the blades of his propeller are so formed that all of the water that comes within their field of action is thrown *inward* as well as *rearward*, and thus the water is kept within a working space of the blades of the propeller, consequently giving the propeller a body of water to act upon at all speeds.

It is further claimed by Mr. Shaw that his propeller will not drag the stern of a displacement boat down at high speed, but keep it on its lines.

Evinrude Motor Co. Ready for Business

The Evinrude Motor Company is prepared for a phenomenal business during 1912, and ample provision has been made to fill all orders immediately. An extensive advertising campaign has been started, and the company has issued a very attractive catalog on their rowboat motor attachment, supplemented by actual outdoor views in colors. Inquiries are flowing in daily with each mail, as results of their advertising.

Although the motor gave perfect satisfaction to its users last year, defects discerned only by the inventor himself have been rectified, and now the Evinrude motor is even better than ever.

Foreign shipments in carload lots have already gone forth, and the immense popularity the Evinrude detachable rowboat motor enjoys abroad is but a slight criterion of the demands probable for this clever device at home.

An Emergency Medicine Chest

From the earliest days of the sailing ship the medicine chest was an important part of the outfit; and yet yachtsmen frequently go to sea for fairly long periods without any precaution being made for unforeseen accidents or sickness. This is not now necessary, as E. G. Mann, of 249 West Broadway, New York, has recently placed on the market for use on yachts or camping trips a medicine chest particularly adapted for emergency use which may be of inestimable value. This not only contains antiseptic bandages, sticking plaster, etc., but a full line of the medicines that are most frequently used. Each bottle is not only named, but is numbered, the index being so plain and to the point that no knowledge of medicine is necessary for their use.

Winners in the Ferro Photographic Contest

The Ferro Machine & Foundry Co. have recently held a photographic contest which has aroused much interest among the users of Ferro engines. This contest has just closed, and the Ferro Company has announced the winners. As one of the judges said: "It is the hardest problem I have had to solve in many a long day," and no wonder, as photographs poured in from all over the globe.

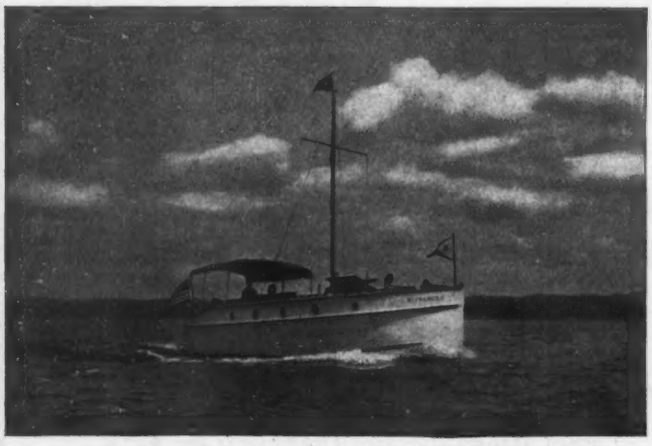
The decision, as announced by the judges, was as follows: First prize, a 3-H.P. Ferro engine and outfit, value $100, to Mr. A. Frank Jones, Putnam Building, New York, subject "Mifrances"; second prize, Bosch High Tension Magneto, value $55, to M. Hazledine, Terre Haute, Ind., subject, "Never Meddle With a Good Engine, Daddy"; third prize, Ferro Reverse Gear, value $28, to F. B. Knowle, New York City, subject, "U. S. Navy Sailing Launch."

The first prize picture showed Mifrances, a flush cabin cruiser, 34 ft. 8 in. over-all and 9 ft. beam, equipped with a 25-H.P. Ferro Engine. She developed a speed of 11¾ miles an hour over the Government courses of the Hudson River, and was capable of plugging along all day at the rate of 10 knots per hour.

The second prize winner's boat has given the owner, his family, and friends untold pleasure. She has a 7-H.P. Ferro Engine, and it was a wise admonition the owner's little son gave his parent when he said, "Don't meddle with a good engine, Daddy."

The third prize was won by a picture of a U. S. Navy sailing launch, powered with a 15-H.P. Ferro engine. She belongs to one of the warships of the North Atlantic Fleet. Her dimensions are 33 ft. long and 9 ft. beam. She has carried as high as 55 men at one time, and is considered one of the best and fastest launches in the fleet.

The contest proved beyond the shadow of a doubt the keen interest taken in motorboating.



Photograph of Mifrances, which won first prize in Ferro Photographic Competition.

A Correction

The Sterling Engine Co., of Buffalo, N. Y., ask us to say that in their February advertisement a misleading statement was unwittingly made. It was stated that Clinton H. Crane was the designer of the Dixie IV.'s engines. This is an error, as the credit belongs to Henry M. Crane, his brother. Clinton H. Crane designed the *Dixie's* hull.

How to Build a 12-Foot Power Tender

(Continued from page 328.)

to the side of boat throughout, and fasten with No. 6 screws put through the outside and close to the lower edge; then fit the mahogany half-round moulding on the outside and put in the nail fastenings, which should pass through moulding, planking, frame and clamp, and be riveted over a burr on the inside. Forward and aft in way of the knees fasten the moulding with screws. All these fastenings should have their heads counter-sunk and the holes plugged with standard wood plugs, which can be bought ready made.

The seat rising or side stringer is similar to the clamp in size and material and fastened with one screw in each frame. The upper outside corner should be in a level line 6½" below the top of clamp at frame No. 9. If this is steamed it will go in easier and put less strain on the fastenings.

FLOORS

Floors are next fitted where shown on the construction plan. They are of oak ⅝" thick and 2" deep at the keel and should extend outboard to the edge of the bottom boards or flooring. In way of the center section of floor they are level on top and then slant up to a depth of 9-16" on the end. Floors 2, 3 and 16 are level all the way across. Fit them over the keel, batten and first plank lap so that they bear on the garboard and next strake their whole width with the exception of a little next to the keel batten for a limber hole. Fasten to the keel with a 4" galvanized wire nail; at the second lap and in the center of the garboard and next strake with copper nails, riveted, or brass screws if the floor is deep. Where a floor is close to a frame, fasten them together with two riveted copper wire nails each side. The holes for these can be bored in the frame before it is bent, but great care must be taken not to let them bend more than necessary at these points for fear of breaking.

ENGINE BED

The dimensions for the engine bed will be governed by the engine but the general construction can be as shown. At frame No. 7 is a heavy floor 1½" thick, which should be quite deep and extend well outboard. On frames 8, 9 and 10 are floors 1¼" thick made as shown on the midship section. Keep them as deep between the beds proper as the crankcase will allow, but otherwise make them the same as the other floors except that the keel fastening should be ⅜" copper rod riveted or set up with nut. The beds proper are of oak 1½" thick, cut out forward to fit over the deep floor and are fastened to the floors with heavy brass screws. Be careful when putting in these fastenings to keep them clear of the engine holding-down bolts. If a bolt or two can be put from side to side, clamping them tight to the shoulders on the floors, it will stiffen them wonderfully.

THWARTS

The thwarts are mahogany ⅞" thick. Finish the edges a flat round and fasten with brass screws to the seat rising, the top of which must be beveled to suit. They can be stiffened with a thwartship piece screwed to the under side, a post in the center, or both. The knees at each end are shown of bent oak or mahogany ⅞" wide and ⅝" thick, which makes a neat and light finish. Fasten the upper ends in the same

Full speed and no danger

¶ Isn't it true, in running your boat one of these two conditions exists? Either you are sacrificing legitimate speed—speed of which your engine is easily capable—because you don't know just when the danger line is reached. You are leaving an unnecessarily wide margin for safety's sake. Or, you are occasionally getting the full speed out of your boat, but each time you do it you are taking a chance of injuring your engine because you can't tell when you have gone beyond the danger point.

¶ What you need is a means of knowing just how fast your engine is running—a means that will enable you to run it up to its maximum speed without danger—a way of knowing its speed and not having to guess at it.

¶ An Eveready Tachometer connected with your engine will show you at a glance exactly how many revolutions a minute it is making. It will enable you to run steadily at the maximum speed. It will show when the danger point is reached and guard your engine against injury.

¶ When you buy a boat its speed enters into the price. An Eveready Tachometer enables you to get the speed for which you are paying. Don't fail to equip your boat with this important feature. Let us send you our Bulletin No. 1182. It gives the prices. (Used on the "Dixie IV"—the fastest motor boat in the world.)

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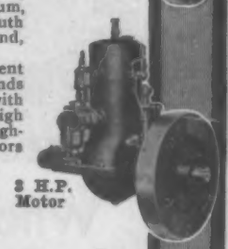
These Engines Are Made in the Most Modern Engine Plant in the World

Northwestern motors are in use in every country in the world. They are in the fishing service on the Atlantic and Pacific Coasts in America, in Finland, Sweden, Norway, Holland, Belgium, Spain, Italy, etc., also in most of the South American Republics, in Hawaii, New Zealand, Australia, and the East Indies.

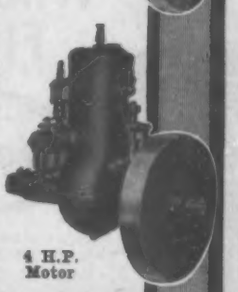
They are installed in Police and Government boats in some of the largest cities. Thousands of pleasure boats everywhere are equipped with the powerful and reliable Northwestern High Duty Engines. The largest boat builders throughout the United States are specifying these motors in their stock boats.

2 H.P. Motor


3 H.P. Motor

2 H. P. Northwestern Motor, $39

The most startling engine offer ever made—a real engine, big and powerful, and not a toy in any sense. Compares in weight, workmanship and efficiency with engines costing nearly double. Do not confuse this engine with many of the cheap makes advertised at so much per pound. It is furnished complete, ready to install in your boat, including electric equipment, two propellers, shafting, stuffing box, wiring, switch, etc.

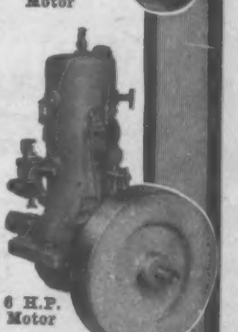

4 H.P. Motor

3, 4, 6, 10, 20 H. P. Motors At Proportionately Low Prices, Depending on the Equipment Desired

Northwestern Engines are strictly high duty, high grade in every respect, and can be furnished with practically any equipment desired, such as Reverse Gears, Reversing Propellers, Special Wico Ignitor, Magnetos, or Perfex Water-proof Ignition System.

THIRTY DAYS' TRIAL

We have a special proposition that we are going to make during the season of 1912, that will enable purchasers to try the engine out thoroughly at our risk, and if not absolutely satisfactory after thirty days of the most severe trial, can be returned and money will be refunded without quibbling.


6 H.P. Motor

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Northwestern Engines are manufactured under Government patents No. 943790, and are the only two-cycle engines in the world made with absolutely gas-tight bearings in the crank case, one of the most valuable inventions in gasoline engine construction of modern times.

Special Prices to Boat Builders and Agents

We are giving splendid inducements to boat builders and agents to handle our engines, and quote special introductory prices in localities where we are not already represented. Write for 1912 Catalog, which is one of the most magnificent publications ever published.

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10 H.P. Motor

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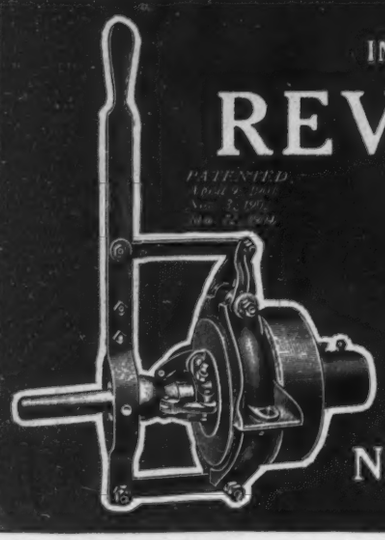

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Liberal discount, specified territory and absolute protection to accepted agents.

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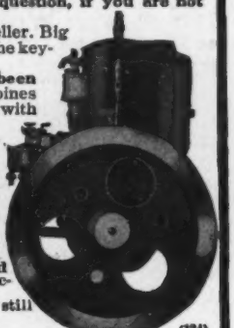

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2 AND 4 CYCLE

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Galvanizing of all kinds of marine work.

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way as the frame heads, also side fasten to the frames and put two screws into the thwart.

MISCELLANEOUS

For the rowlocks fit a piece of oak between the planking and clamp and through fasten; then make a block as shown with the corners neatly beveled and fasten well with screws.

On the after side of frame No. 3 fit a partial bulkhead of ½" mahogany with the grain running athwartship, and forward of this fasten three pieces of ⅞" x 2" spruce to support the tank. After the tank is in place and secured, fit a beam at each frame and deck over ¾" mahogany, with grain fore and aft, fastened with screws. Leave space enough forward so that the painter ring bolt can be reached; also cut a hole large enough to unscrew the tank fill plate.

The boat will now hold its shape and the cross spalls may be removed. Any time after the clamps are fitted cut off the frame ends even with the top of the clamp and sheer strake. Saw a trifle long and trim smooth with a chisel.

Next turn the boat upside down and prepare the bottom for varnishing. With a smooth, flat file (about 10") go over all the nail and screw heads until they are perfectly smooth and flush. Finish the bottom of the horn timber fair with the plank; round off the bottom corners of the keel a little; plane off the after ends of plank flush with the transom; see that the forward ends finish flush with the stem; then give the whole outside a good sandpapering and varnish. Sandpaper all parts inside thoroughly, especially taking off the sharp corners on the frames, and varnish.

Make the bottom boards of white pine, cedar or cypress ½" thick and fasten the outside pieces with screws. Leave the center section loose for cleaning and secure it where necessary with brass buttons. The under side of these boards should be either varnished or painted to prevent warping.

Make the rudder of mahogany as shown on the detail drawing. The upper part is 1" thick, but about a foot from the top it should begin to taper so that the edge of the blade is ½" thick all around, and rounded. Drive a couple of ¾" brass bolts through it to prevent splitting. The method of hanging I will leave to the builder. There are a number of ways, and standard fittings of various kinds can be bought from dealers in boat hardware. It is advisable to get them before making the rudder, as the thickness may be changed within reasonable limits to suit. The simplest arrangement for the steering gear is to have a tiller, as shown, with a rope all around the boat.

The stem band is ⅜" half-oval brass, bent over the stem head and extending well under the fore foot. Fasten with brass screws, countersunk. Have the slots stand vertical and file off neatly to conform to the shape of the stem band.

All parts inside and outside should have at least three coats of spar varnish, and the best is none too good. Allow the first and second to dry hard and lightly sandpaper with No. 1.

The construction of this boat is neither light nor very heavy. If weight is an important consideration nearly every part can be made lighter, but extreme lightness requires perfect workmanship and will not give as long service.

MOTOR

Very little can be said regarding the engine installation as nearly everyone has his own ideas about the type and arrangement. If the engine is fitted with a reverse gear it may be necessary to move it forward somewhat or else change the reverse lever so that it clears the thwart. With such a small boat reversing is not essential and a gear takes room, adds weight and makes more parts to look after. A reversing propeller would be simpler and lighter than a gear on the shaft.

A three-bladed wheel will give the least vibration and best service. However, if the boat is to be towed much I would suggest a two-bladed one with some means provided to clamp it with the blades vertical to reduce resistance.

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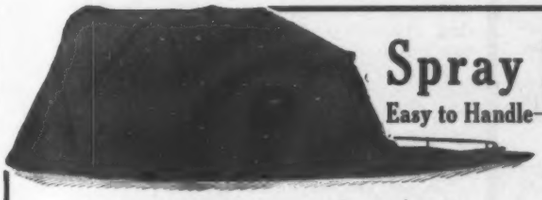

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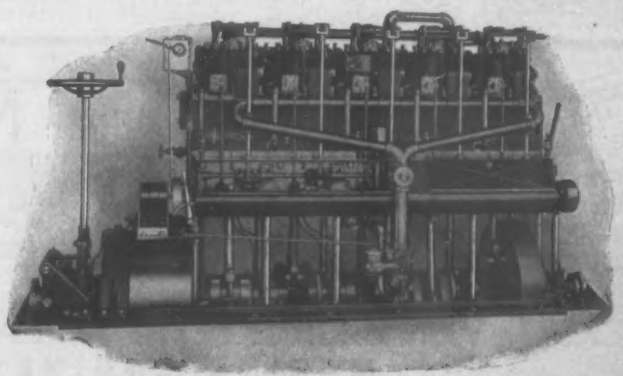

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Biddle Propellers are designed by experienced naval architects. Write for details on propellers and hardware.
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Knocking About Lake Michigan

(Continued from page 314)

A couple of hundred feet of rode was bent on, and overboard it went; the mainsail was taken in and lashed; a tin pail was stuffed full of waste, filled up with cylinder oil, a row of holes punched around it and the cover lashed on and this was fastened to the rode about 50 feet from the stem; finally, a storm jib was set as a trysail on the jigger to help hold her head to the wind and everything was made snug and fast. The effect was immediately apparent, and the Fish rode easily in a film of oil over seas which no longer showed their teeth.

The glass, which had been dropping again since noon, now showed a rise, and all hands went below, snugged down everything that was loose, and after divesting themselves of their wet clothes and taking a good stiff drink apiece, proceeded to get such comfort as they could from the heat from the oil-stove. We rode it out the balance of the night and at dawn, the wind and sea having subsided somewhat, the boat was put on her course under three-reefed mainsail. Along about 6 o'clock we got the mizzen and a storm jib set, and about 8:30 sighted Sheboygan.

An hour and a half later we slid in between the piers, ran up the channel a short distance under power and moored to the dock at the life-saving station. The crew made a half-hearted attempt to clean up, pumped her out, and proceeded to make up for lost sleep. At 5 P.M., being still too tired to do any cooking, all hands went uptown and treated themselves to a hearty meal, and turned in again at ten. Run (as we made it) 104 miles.

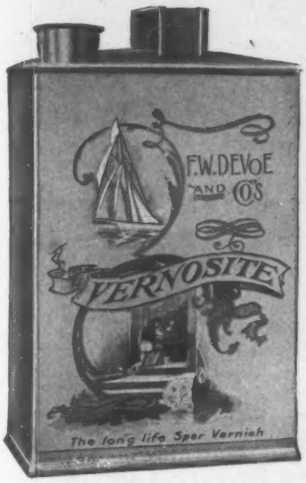
Wednesday, August 8 was spent resting up and wandering about the town, which, while a nice place as towns of its size go, has nothing in particular to recommend it to yachtsmen except that its harbor is well protected. In fact, our stay here proved the least enjoyable of any of the ports at which we stopped, and we made up our minds to head south on the morrow. Consequently we arose early on Tuesday, August 9, anxious to be on our way, and ran out under jib and mizzen.

Arrived off Whitefish Bay at 3:30 and anchored for a short time. Whitefish Bay is a summer park about 8 miles north of Milwaukee and is run by one of the Milwaukee breweries. There are few amusements but good fishing, though no harbor or protection for yachts whatever. Having secured some beer, weighed anchor and ran out around Fox Point and so down to Milwaukee harbor, where we moored in the yacht basin. Supper over, all hands dressed and went uptown.

Sunday, August 12—Left Milwaukee harbor under power at 7 A.M., bound for Waukegan, 48 miles south. Made sail outside, where we found a fair wind from N.W. Standing out around Wind Point and passing inside the reef, we again held southward with all sail set, logging perhaps 5 knots. Passed Racine, Wis., 22 miles south of Milwaukee, a little after 11 o'clock, with the wind dying. Off Kenosha, some 9 miles further south, the wind deserted us entirely and the motor was started, pushing us steadily along until about five, when we entered Waukegan harbor and anchored in the south basin, where several other small yachts were moored, just off a bathing beach. Day's run, 52 miles.

Tuesday, August 14. This was to be the last day of our trip. We left the basin at Wilmette under power about 9 A.M. and finding a light N.E. breeze outside we spread canvas and rippled along at perhaps 3 knots an hour. After running out clear of Grosse Point, laid a course for our home port, 23 miles away. The day was beastly hot and we all exerted ourselves as little as possible until within an hour's run of Jackson Park when we busied ourselves cleaning up and getting everything ship-shape. At two we nosed around the pierhead at Jackson Park harbor, and ten minutes later the Flying Fish was swinging to her own mooring near the replicas of the Columbus caravels, after being out 18 days and loafing a distance of over 400 miles.

VERNOSITE



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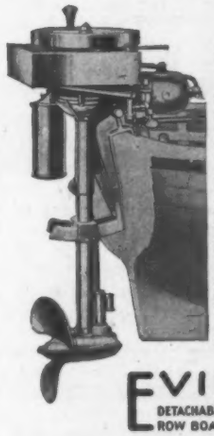

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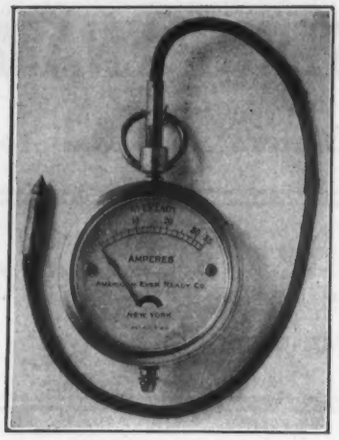

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Overhauling the Motor Boat

(Continued from 304)

proximately 1-32 of an inch is about right for the average motor. An ordinary mailing tag may be placed between the valve stem and tappet, and the rod so adjusted that the card is just free to move between.

For an aid in timing the motor, a good rule to remember is that the exhaust valve in most marine engines is timed to open from 30 to 40 degrees before the crank reaches lower dead-center. Some motors are timed to close at head-dead center, but the average motor will turn up better by timing the exhaust valve to close 5 to 10 degrees after passing head-dead center. The inlet valve opens immediately after the exhaust closes, which is about 5 degrees beyond head-dead center position. To properly perform its function, the inlet valve should close from 25 to 40 degrees after the crank has passed the lowest point in its travel.

Much of the information already given is equally applicable to both the four- and two-cycle types of motors. There are, however, certain characteristics peculiar to the two-cycle type, and I will briefly enumerate the few important points to be considered in overhauling. In the two-cycle motor, the incoming mixture enters the base of the motor, and being slightly compressed therein by the down stroke of the piston, the compressed gas rises through the inlet by-pass port into the combustion chamber of the cylinder. Having no valves, the two-cycle motor is provided with a gas-tight ring at the base of the piston, which prevents the mixture from escaping past the piston before the exhaust port is closed. Performing an important service, this packing-ring should be examined, for unless it is gas-tight the compression of the motor will be inadequate to produce the full rated power. The piston must also fit the cylinder bore perfectly, and while trouble of this sort is not common, yet it does occur at times, particularly in the cheap one-cylinder engines.

In two-cycle motors of the three-port type the automatic intake valve should be overhauled, ground-in if necessary, and the spring renewed.

Getting the Most from Your Sails

(Continued from page 310)

puts the draft just in the right place up along the stay and keeps the after edge of the jib flat so the wind flows off it without the assistance of a curled-over leach, which tends to throw the wind in against the mailsail and interferes with the pulling of that sail.

The modern jib is never reefed. In the days of the old sloops the bonnet was taken off, as the process of unlacing the lower section of the jib was called, or it was rolled up and reefed, making an ungainly looking piece of canvas out of the jib. Instead of this, the modern racer has a smaller sail, called a No. 2 jib, which is set in the place of the regular one when less head sail is wanted, the jibs being fastened to the stay with snap hooks instead of with solid hanks, as formerly.

It is in changing jibs that sails get the most abuse, for the amateur sailor generally has to work under conditions not to his liking; and as the jib, generally soaking wet, is hauled aboard, there are chocks, cleats, bitts, etc., for it to catch on. It is wonderful how many loops a jib can take around various fittings, even to cleats on the mast, and finally, just before it is thrown down the companionway, it folds over the end of the companion slide runway. Most jibs land on a dirty cabin floor that may be sloppy with bilge water, and are tramped on by shoes that leave a dirt mark with every step. Don't handle your head sail in this manner!

The fact that most small yachts are short-handed is generally responsible for such treatment. Roll the jib up into a ball on the bows and pass it aft without dragging it as a mop along the deck, and let another man either stuff it into a sail bag or stow it securely on a bunk.

(To be continued)

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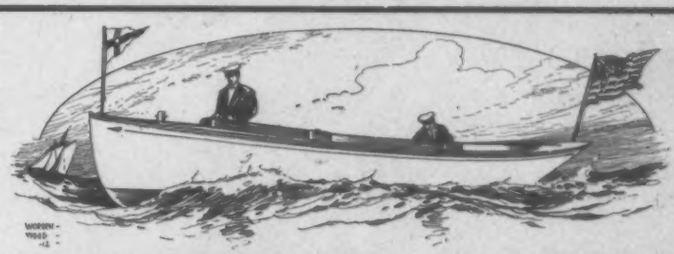

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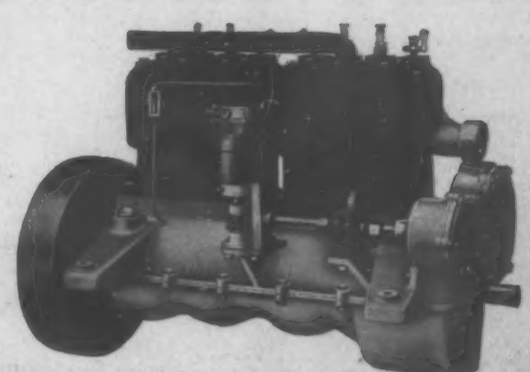

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THE MAGAZINE FLOWERS is published once a month, and is printed in every-day language that every one can understand. Technical terms are avoided. It is about the size of "Life," and is printed on fine quality paper in large clear type. The illustrations are all from actual photographs.

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"The Beauty of Flowering Bulbs"; "The Fascination of Wild Flowers"; "Selecting the Best Flowering Shrubs"; "Growing Pansies from Seed"; "The First Wild Flowers of Spring"; "Flowers of Common Trees"; "The Floral Dial"; "Old-Fashioned Gardens"; "The Sacred Iris"; "Favorite Old-Fashioned Flowers"; "The Glory of the Gladiolus"; "The Peculiarities of Flowers"; "The Language of Flowers"; "Photographing Flowers."

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The Exposure of an Expert

(Continued from page 307)

snort of contempt, and gradually he lashed himself into a fury of mingled injured innocence and outraged professional reputation.

"It's a *do*, that's what it is!" yelled his high, throaty crow as he dashed the greasy pieces on the cockpit floor. "It's a put-up job to expect *any* expert to run such a mess of junk as this here. Look at those piston rings,—they couldn't hold an ounce of pressure,—why, you could sing the sextette from Lucia over the top of them. She fires right over them and touches off the charge in the crank case as well as the one in the cylinder. Look at those bearings;—worn so you could throw a pup through the cracks, and the engine has no compression. She leaks gas like a sieve. Look at——"

Just then Rafferty, the wag of the club, launched a stick of white pine bearing a jack-knife.

"What's that for?" inquired Acker acidly.

"Jack-knife and wood to whittle repair parts out of," jeered Rafferty amid a roar of guffaws.

"No man can whittle piston rings with a jack-knife," shouted Acker. "You damphools make me tired!"

He gathered up the rings, the bearings, two pot-black, greasy connecting rods and some liners, and did them up in a bundle.

"Someone throw me a rope," he called, "I'm going to take these up to the garage and have them fixed, and then we'll continue this test with a fair engine. All I want is a square deal."

"No you don't—emphatically no!" objected the Skipper, rising, "put down those engine parts—they're mine!" There was no withstanding the Skipper when he meant business. Many a mutinous deckhand had quailed before him on the high seas, let alone a fourflusher like Acker.

"Then I refuse the bet!" stamped Acker, throwing down the bundle of parts.

"Commodore, I protest!" called the Skipper, raising his hand and appealing to the float, "I hold one end of this bet. When you're all in—you're through, aren't you, Acker?—I'm to run her out around the buoy again—isn't that it?"

"Those are the terms," corroborated that official dryly.

"And I bet you fifty more you can't get her together again," added Acker excitedly.

"Keep your money—no more bets with a quitter for me, and if my words displease you I'd be tickled to death to go further into the matter with you," retorted the Skipper. "Sit down and be quiet."

Acker sat with his head in his hands. Sat through a miserable ten minutes while the Skipper deftly assembled the engine.

"Now, then, sir!" remarked the Skipper shortly. He gave the flywheel a whirl, and a shout of laughter went up from the float as, after a couple of preliminary coughs, the engine began that trustful little *squeak-sniff, squeak-sniff, squeak-sniff* that the whole club had come to recognize as the bark of the *Mary Gee*.

Slowly she gathered headway amid tumultuous cheers from the float; slowly she swung around, heading for the buoy; steadily she paddled out to it in a mixed riot of howls, hoots, whistles and foghorns, and triumphantly she returned, drawing applause by the yellful. And no Roman conqueror, with his captives, chained to his chariot wheels, ever returned with half the frenzied exultation of the populace as did the Skipper, with the miserable and dejected Acker cringing in the stern sheets.

As they touched the float Acker sprang for the shore, shoved his way gruffly through the crowd, and beat it for home. The Skipper stepped out like a visiting admiral.

"Do I get the money?—Do I?" he chortled, taking the Commodore's hand. "Damn my eyes, I've laid for that intolerable mechanic's scalp, lo, these seventeen weeks, and *did* we metagrobolize him!—Lord, but he was well singed!"

And the next day the following notice went up on the *Blazing Arrow:* FOR SALE QUICK —NO REASONABLE OFFER REFUSED.

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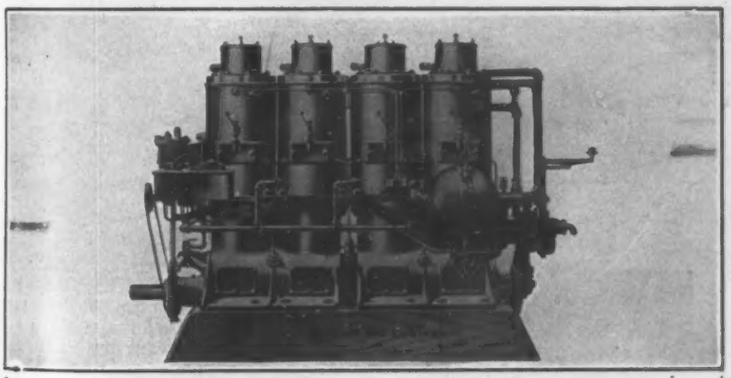

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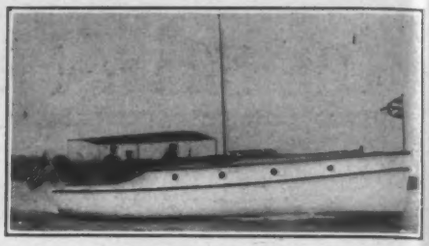

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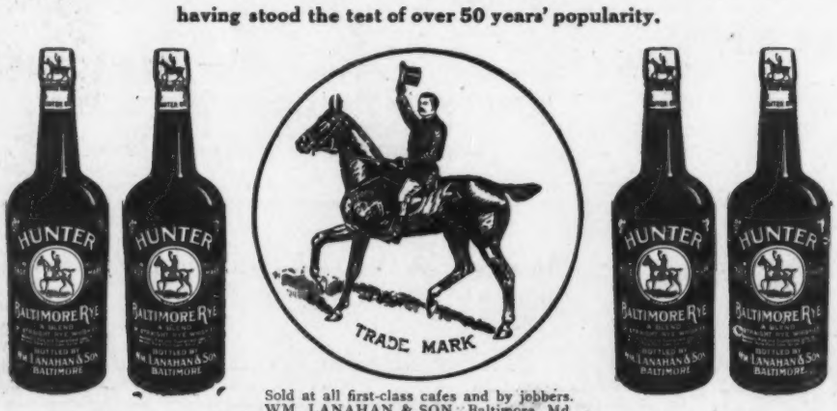

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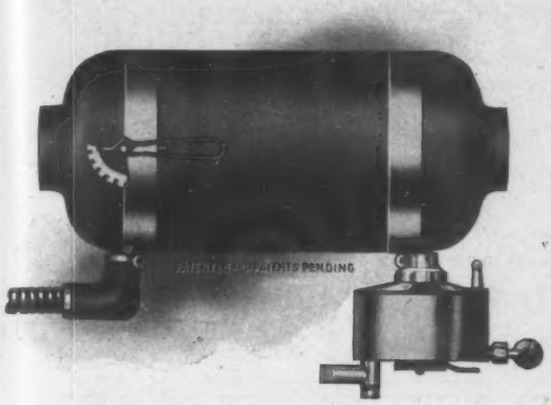

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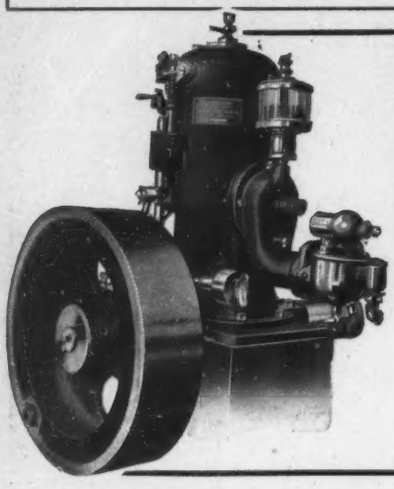

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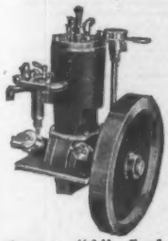

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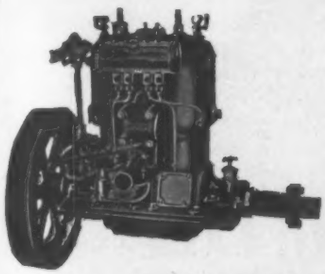

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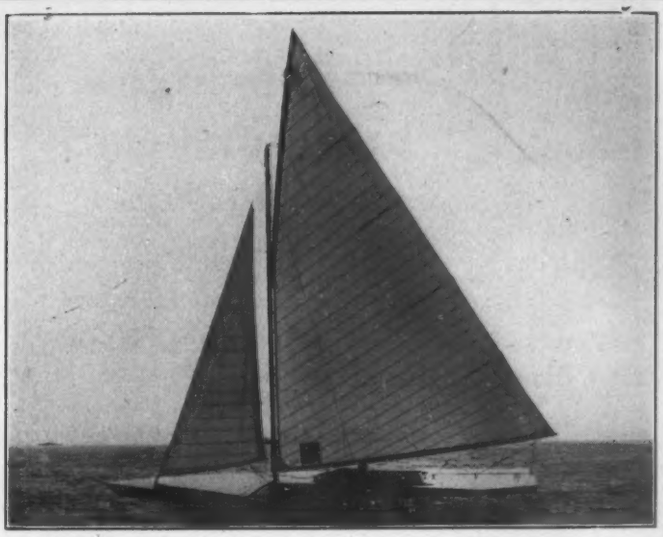

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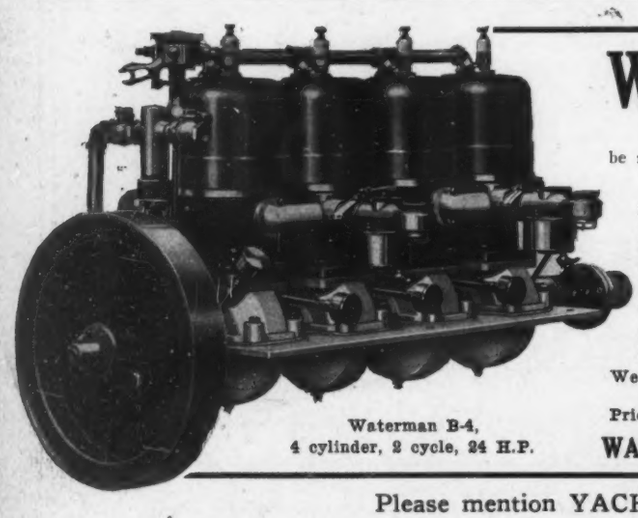

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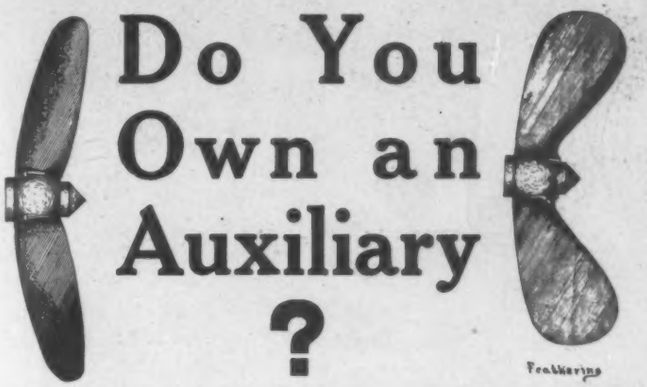

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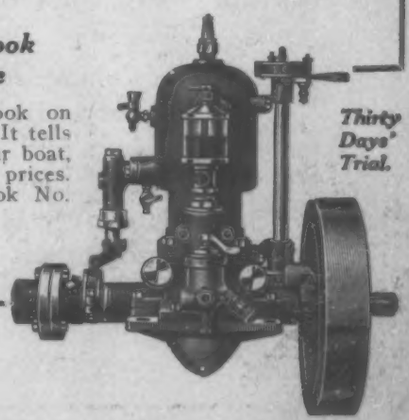

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In the Captain's Cabin

BY the time this Fitting Out number gets into your hands most of the skippers will have rounded up their crews and set them to work on the annual spring overhaul. It's funny how hard it is to get together a crew for this work, short of "shanghaing" them, and how easy it is to sign on a bunch when the sailing season is on. Boat owners have probably noticed this fact and commented upon it in vigorous language. By the time the

May Number

is out many of the boats will be in the water, and the early birds will be having their first sails.

One of the leading features in this issue will be a cracking good story of a cruise on the Pacific coast from San Francisco to San Diego and return. It is a fine story of a trip in a little 37-foot sloop along the entire length of the southern California coast, with a visit to the off-lying islands. Starting in a race and ending in a long beat back the 1,300 mile trip was full of exciting incidents which are graphically told by Charles E. Miller, the skipper.

Getting the Maximum Efficiency from a Gasolene Engine is a practical article by Wilbur H. Young that will make a special appeal to the users of motor boats and auxiliaries. The average man usually feels that he is not getting the most out of his engine and is continually striving to increase its efficiency. He will find many points in this article that will help him to get more work out of his outfit with greater economy. Mr. Young is a man who has had much practical experience along these lines, and is capable of speaking authoritatively on the subject.

Every yachtsman and lover of the sea is stirred by the deeds of famous yachts of the past and in *Sappho—a Failure that Won the America's Cup*—he will find a story that holds the interest and quickens the blood. Details of the life of this famous yacht are mostly forgotten in the limbo of the past, and in overhauling the material for the story a wealth of matter was uncovered.

Cruising and Fishing Among the Florida Keys is an account of an interesting cruise in an auxiliary Cape Cod catboat off the Florida Keys. It will make a special appeal to those who take as much pleasure in "laying off" for a few days and trying their luck with a line as others do in seeing how much ground they can cover in a given time.

Captain E. T. Morton will have an article in the May number on *The Rules of the Road*. This will be a discussion of the various rules formulated to provide safety at sea, giving the reasons for them and showing how to act in some of the ticklish situations which frequently arise even when living up to the letter of the rules. Every man who sails his own boat should read it.

The May Outing

The May OUTING opens with the article *Where the White Sheep Range* by Belmore Browne. Mr. Browne is an experienced big game hunter and mountaineer and is thoroughly familiar with the mountain sheep country of Alaska about which he writes. In addition to being hunter, writer and mountain climber, he is an artist of skill as his illustrations show.

Old Ephraim's Finish is a life-like tale of trout fishing days in Vermont and of the big fish that didn't get away—although it might as well, so far as the real fishermen are concerned.

Fishermen who have heard of, and perhaps attempted the English art of fishing with the dry-fly, will look for Samuel G. Camp's article. He will have more to say in later issues, but in this one he clears the ground and discusses briefly the important matter of equipment.

The other features of the May OUTING are *New Rivers of the North* by Hulbert Footner, which carries the wandering canoeist down the Lilliput River of British Columbia; *The Mediterranean Fowls* by Arthur S. Wheeler, an intelligent discussion of some of the well-known breeds; *Outdoor Target Practice* by Charles Askins, in which the amateur rifleman is given some tips on distance and moving target shooting; *The Origin of the Irish Terrier* by William Haynes, a picture of the early days of this interesting breed, and *The Canada Lynx at Home* by Charles Stewart Moody, a series of snapshots of this interesting denizen of the woods.

Among the fiction will be found another instalment of *Footloose and Free* by Stephen Chalmers; *Watchers of the Reeds* by F. St. Mars, and the *Horse Thief* by Charles Alden Seltzer.

Commander C. S. Stanworth, who is well known to the readers of YACHTING by reason of his series of articles on Pilot Water Navigation, and on kindred subjects, is booked to write a number of other articles that the "boys" will find both interesting and instructive. Commander Stanworth, though he retired from the navy a few years ago, is still a young man and has seen much sea duty since he was graduated from Annapolis some 25 years ago. He made several long voyages in some of the old sailing vessels of the Pensacola and Kearsarge class, and was on the Baltimore, of Admiral Dewey's fleet, at the Battle of Manila Bay. YACHTING readers will have a chance to read some stories from him on less practical lines in the near future.

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Wing and Trap Shooting, by Charles Askins, is the only practical manual in existence relating to wing and trap shooting.

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The Fine Art of Fishing, by Samuel G. Camp. Includes detailed instructions in various forms of trout and bass fishing.

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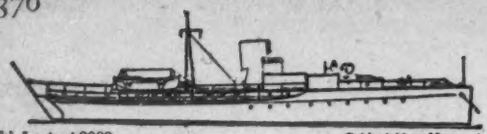

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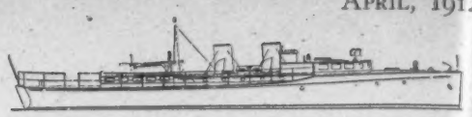

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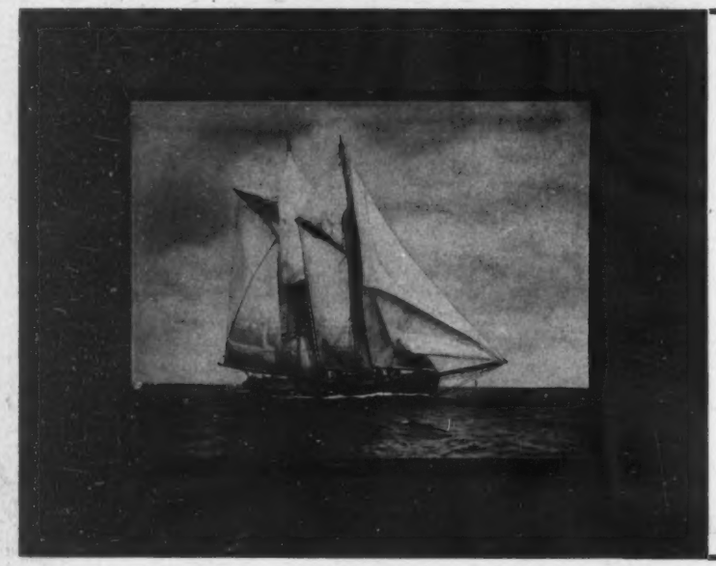

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The New Navy of the United States

By N. L. STEBBINS

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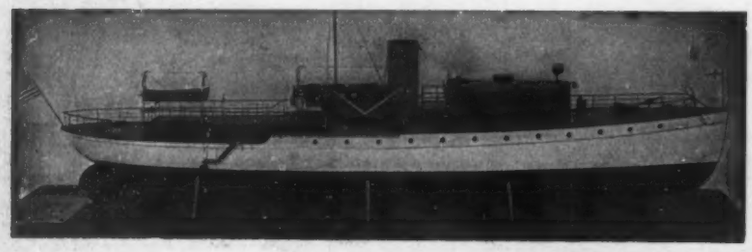

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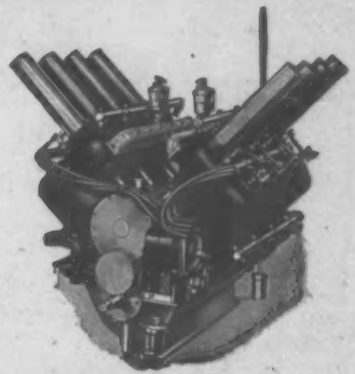

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